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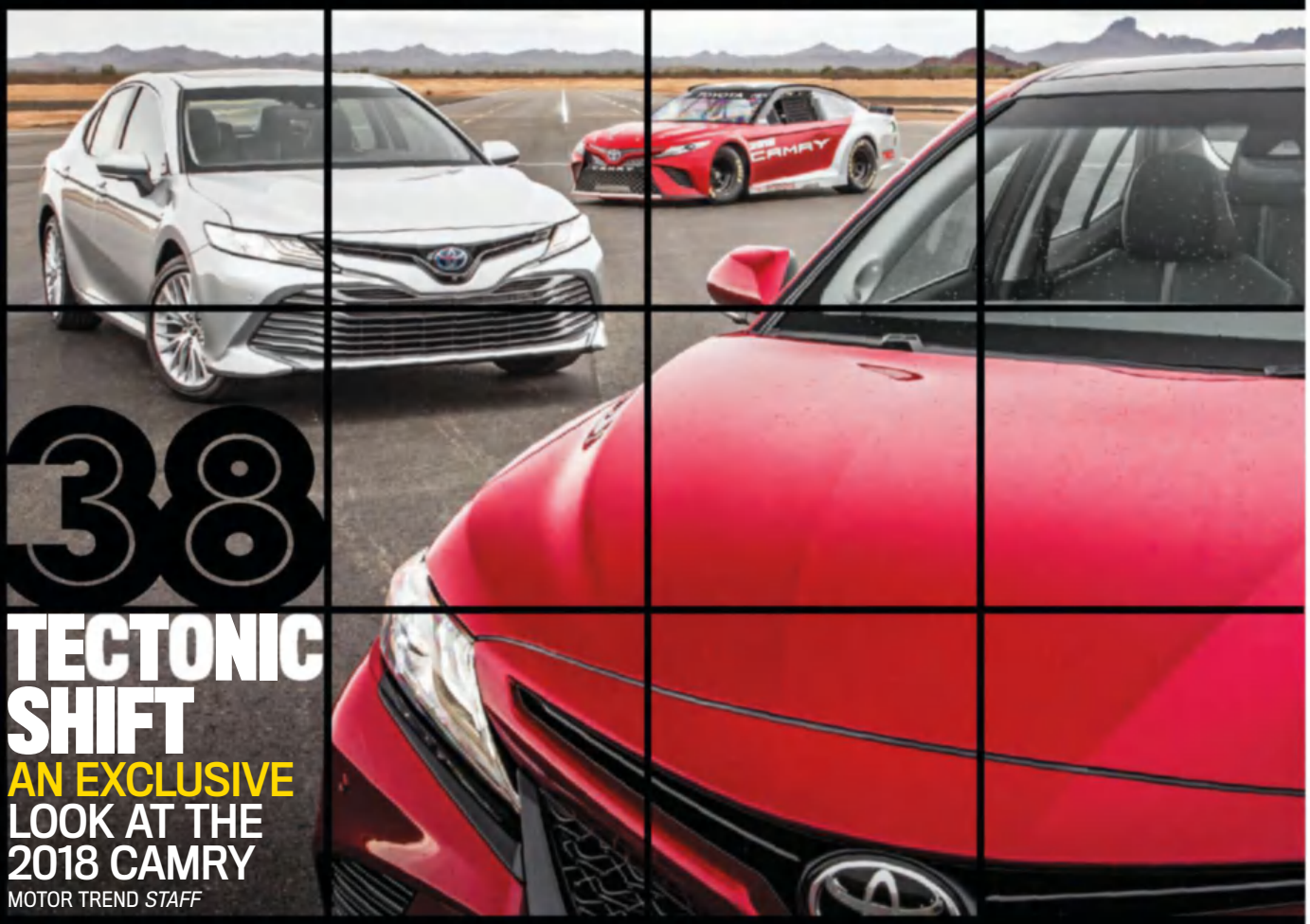

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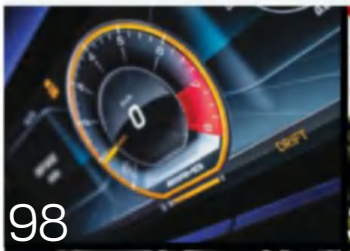

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Edward Loh @EdLoh

The Lohdown

Wait up, not so fast

A couple of days before this issue went to press, I flew to Detroit for a meeting with Ford CEO Mark Fields. Fields opened with a statement about how Ford needs to pivot its core business model "from an auto company to an auto and mobility company."

"We're really seeing how the world is changing," Fields said before citing changing societal trends such as urbanization, congestion, and changing consumer habits driven by millennials. "The transportation that has worked for us for the last hundred years is going to be really challenged to work for us for, forget the next hundred years, the next 20 to 25 years."

Fields' comment came the same day Uber began testing autonomous Volvo SUVs in San Francisco, and it came on the heels of ride-hailing updates from GM, Tesla, and Google. It seems everybody is looking to get a piece of the "shared"—possibly autonomous—economy.

Fields' words were still ringing in my ears the next evening when I landed back in L.A. and waited for the Lyft I had hailed. I even tweeted about the absurdity of how we've become so fed up with the service of the taxi industry that we now go for rides in the personal cars of compete strangers. But as I waited, I checked on the status of driver Tony, who appeared immobile. He had called to confirm my location and destination, so I'm sure it was just traffic. Right? Dread crept in. Not again.

Lately, I have had a spate of bad service from Lyft and Uber drivers who cancel or refuse pick me up because my trip is too short. Twice I've been turned down because my sub-5-mile trip from LAX to *Motor Trend* HQ is not just worth it to them (and could I please cancel the request so the driver doesn't get a black mark on his record).

Tony took it a step further by simply not answering texts or answering when I called to confirm. He was apparently assuming I would cancel, which is not only incredibly unprofessional but ironic, as well.

Because of frequent travel in and out of LAX, I have been a huge proponent of ride-hailing services. Just a couple of years ago, hailing a cab anywhere in L.A. was an expensive exercise in masochism. The worst was the abuse you'd suffer in the taxi rank at LAX. I have had taxi drivers sigh, swear, and even tell me to get out and take another cab after I told them the address of my destination. Others would complain at requests to use my company credit card or say there was no other way to pay except cash. The stink eye, the attitude, the smell ... there was simply no other option until Uber arrived.

In the early days of Uber, the driver actually got out and helped me with my bag. There was no haggling over route, air-conditioning, or payment. I proselytized to all who would listen in those early halcyon days. The same goes for Lyft, who my sister lauded as the "kinder, gentler, cheaper Uber."

It seems everybody is looking to get a piece of the the "shared" economy.

SHARING ECONOMY Ford's Fields forecasts the future.

But now here we are. Mass adoption has fueled competition, which has driven down prices. Drivers have gotten wise. The same attitudes that doomed the legacy industry are sprouting up in the disruptor. Funny thing is, the taxi industry has responded to the challenge. There now are cab-hailing apps available in most major cities. Even LAX cabs have shiny new credit card machines, and drivers don't grumble when you ask to use it. How do I know? How do you think I got home? ■

THE HOUSE OF MUSCLE COMES TO ON DEMAND

We're pumped about *The House of Muscle*, and you should be, too. Muscle-car guru Mike Musto joins the *Roadkill* and *Motor Trend* family, and he recently gave us sneak peek at what his new show is all about:

"*The House of Muscle* is all about the relationship between the enthusiast and their vehicles," Musto says. "We all know that for many of us, our cars transcend that of 'just' transportation. They can be family members, therapists, our hobbies, and our friends. *The House of Muscle* explores these relationships, takes the machines out for a full-blown test drive, and in the end tries to encourage everyone to simply get out and drive. I want to tell the stories of the people who own the cars. It's about the guy who is on his back pulling a transmission out, 16-year-old kids who are doing their first oil change. I had never seen anybody talk to those people."

Catch Musto and *The House of Muscle* flexin' on MotorTrendOnDemand.com.

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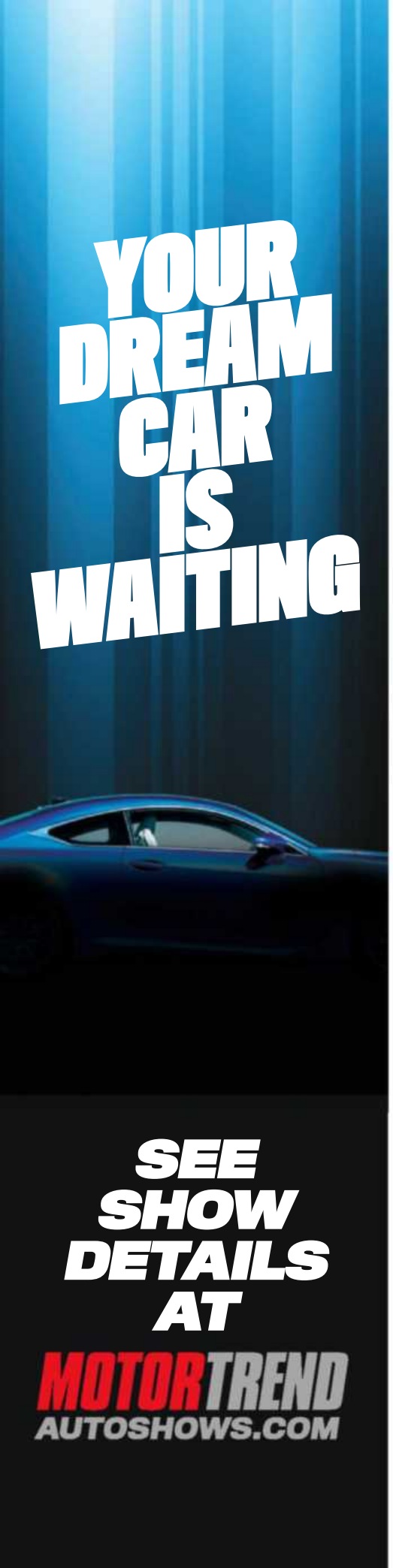

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THIS MONTH'S HOT METAL

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WORDS FROM OUR EDITORS

THEY SAY P34 INTERVIEW
MIKE SIMCOE HEAD OF DESIGN, GENERAL MOTORS

FIRST LOOK

KIA Stinger GT

The Stinger is the name, and hunting BMWs is the aim. Targeting the BMW 4 Series Gran Coupe, the Kia Stinger is a sexy, sporty five-passenger, five-door coupe that makes 365 horsepower in top-spec trim.

Although the name comes from the Stinger GT4 concept Kia showed at the 2015 Detroit auto show, the design is based on the Kia GT concept, which first appeared in 2011 in Geneva. The GT concept was styled by Peter Schreyer, who was the head of Kia design at the time, and the production car's design was led by Kia's European design chief, Gregory Guillaume.

Elements such as suicide doors and a winged front end were discarded, but details such as the notched windshield, the functional side vent, and the metallic arc that runs from the A-pillar to the rear deck were ported over.

FAVE ANGLE The rear three-quarter view (right) highlights the Kia's curves.

YOUR SAY P36
READERS TALK BACK

AIMING AT BMW Our stints in preproduction prototypes confirmed Kia's focus on BMW's 4 Series Gran Coupe. The AWD Stinger GT understeers predictably, and the rear-drive version drifts the skidpad on demand. Its design, led by Gregory Guillaume (right), also takes aim at BMW.

THE FIVE-DOOR, FIVE-PASSENGER KIA STINGER IS A SEXY, SPORTY COUPE.

Intake

BASE VS. GT More aggressive ducting, LED headlights, and chrome trim separate the GT from the base Stinger (white). Both stem from Peter Schreyer's (right) Kia GT concept.

The best discovery occurred on the skidpad. The Stinger will drift, easily.

Stance and proportion are key to the Stinger's design. Schreyer and Guillaume are proud of the Stinger's Coke-bottle curves and cab-backward profile. The greenhouse is shifted to the rear, which results in a rakish take on five-door fastback design and a roomy rear-seat package.

The long dash-to-axle ratio confirms a longitudinally mounted engine in this rear-/all-wheel-drive platform. A 2.0-liter turbocharged four-cylinder engine making 252 horsepower and 260 lb-ft of torque propels the base Stinger, and the higher-spec Stinger GT receives a 3.3-liter twin-turbo V-6 that makes 365 horsepower and 376-lb-ft of torque. Rear-wheel drive is the default and comes with a multiplate Torsen limited-slip differential. All-wheel drive with brake-based dynamic torque-vectoring control is available with both engines, but there is only one transmission option, the eight-speed automatic already seeing service in the Kia K900 and Genesis sedans.

Kia's parent company, Hyundai Motor Group, was formerly part of the massive Hyundai *chaebol* (conglomerate), which did business in everything from aerospace to heavy shipping. That conglomerate was broken up more than a decade ago, but HMG still produces steel. It's no surprise then that the Stinger eschews aluminum for a body composed of 55 percent advanced high-strength steel. Kia declined to disclose the Stinger's weight, but we estimate a loaded all-wheel-drive GT will be north of 3,800 pounds. A MacPherson strut setup in front and a five-link rear suspension carry that steel.

Steering is power-assisted rack and pinion with a constant gear ratio for the base model and a variable gear ratio rack for the GT. Brembo brakes with four-piston calipers up front and two-piston units at the back are available on the GT. Wheel and tire specs aren't finalized, but expect 18-inch standard and 19-inch optional wheels on the GT with staggered-width tires from Michelin (Pilot Super Sport) and Hankook (Ventus) being evaluated.

At 190.1 by 73.6 by 55.1 inches (length by width by height), the Stinger measures larger in every dimension than the BMW 4 Series Gran Coupe and Audi A5 Sportback. The Stinger is 7.5 inches longer overall with a 3.8-inch longer wheelbase than the Gran Coupe. These extra inches give the Stinger an impressive interior package. The rear seat fits the 6-foot-3-inch Albert Biermann, the BMW veteran who now heads Hyundai's high-performance development. Biermann says he can comfortably sit behind the front seat positioned to his driving position.

Performance targets are aggressive. Biermann says the Stinger aims to be best in class, with 0–62-mph times of 6.0 seconds for the Stinger, and 5.0 seconds for the GT.

We were allowed only four laps total in all-wheel-drive and rear-drive GT prototypes at Kia's Namyang R & D center. But we can confirm potent thrust from the 3.3-liter twin-turbo V-6, acceptably crisp shifts from the eight-speed automatic, and predictable understeer from the all-wheel-drive GT. One sprint through a cone slalom demonstrated reasonably tight body control, but the best discovery occurred on the skidpad. The Stinger will drift, easily.

Many questions about the Stinger remain. And there is still much fine-tuning and validation testing ahead of the late 2017 or early 2018 on sale date. We're following this baby into production. **Ed Loh**

SPECS **Price** $39,000-52,000 (est)
Vehicle Layout Front-engine, RWD/AWD, 5-pass, 4-door hatchback
Engines 2.0L/252-hp/260-lb-ft turbocharged DOHC 16-valve I-4; 3.3L/365-hp/376-lb-ft twin-turbo DOHC 24-valve V-6
Transmission 8-speed automatic
Curb Weight 3,600-3,800 lb (est)
Wheelbase 114.4 in
L x W x H 190.1 x 73.6 x 55.1 in
0-62 MPH 5.0-6.0 sec (mfr est)
EPA City/Hwy/Comb Fuel Econ Not yet rated **On Sale In U.S.** Late 2017 or early 2018

CUV SIBLINGS Both the GMC Terrain and Chevrolet Equinox (right) feature all-new panels and have made the move to GM's global D2 architecture.

2018 GMC Terrain

With each new small crossover that hits the market comes the challenge of standing out in a segment of cookie-cutter designs. Into the fray comes the 2018 GMC Terrain, which aims to distinguish itself from its sister, the Chevrolet Equinox, and from the pack.

To that end, the new Terrain deviates from the boxy model it replaces with more curves, character lines, and a sculpted hood. The upright grille that has become a signature of the professional grade brand remains, as do the C-shaped headlamps and taillights.

GMC gets points for a nice use of aluminum inside and out. There are different levels of aluminum for each trim grade, and they retain impurities for authenticity. Conversely, the wood trim is all films, but they are attractive. Nice touches include storage in the instrument panel above the glove box and a flow-through storage area under the center console. And we are assured that the 3.0 HMI is more intuitive and improved compared to the GMC Acadia that came out earlier this year.

Like the Equinox, the Terrain will be offered with a choice of three turbocharged engines—1.5-liter and 2.0-liter gas engines and a 1.6-liter diesel—when it goes on sale next summer. The gas engines are mated to GM's new nine-speed automatic transmission, but the diesel is paired to a six-speed. Gear selection is via a panel of buttons in the center stack. Push a button for park, for neutral, or to engage manual shifting. But to move the car into drive or reverse, you must hook your finger over a button and pull it back—a safety measure so you don't accidentally engage a drive mode.

About 13 percent of buyers will likely opt for the Denali top trim, which has more chrome detailing, a more substantial grille, a new interior color, unique 19-inch wheels, and body-color rockers and wheel arches.

Exterior designer Matt Noone says the goal was to eradicate the idea that the Terrain is a rebadged Chevy. It might not be the most distinctive CUV on our crowded roads, but no one will mistakenly slap a bow tie on it.

Alisa Priddle

FIRST LOOK

SPECS **Price** $25,000-$37,000 (est) **Vehicle Layout** Front-engine, FWD/AWD, 5-pass, 4-door SUV **Engines** 1.5L/170-hp/203-lb-ft* turbocharged DOHC 16-valve I-4; 1.6L/136 hp /236 lb-ft* turbodiesel DOHC 16-valve I-4; 2.0L/252-hp/260-lb-ft* turbocharged DOHC 16-valve I-4 **Transmission** 6-speed automatic, 9-speed automatic **Curb Weight** 3,350-3,550 lb (est) **Wheelbase** 107.3 in **L x W x H** 182.3 x 72.4 x 65.4 in (est) **0-60 MPH** 6.5-10.0 sec (*MT* est) **EPA City/Hwy/Comb Fuel Econ** Not yet tested **On Sale In U.S.** Summer 2017

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From the *Motor Trend* Archive...

REARVIEW

50

MARCH 1967
PRICE: $0.50
The top billing in our March 1967 issue went to the new "Firebreathing" Pontiac Firebird, and the Jeep Commando Jeepster brought back the Jeepster name. We also took a look at "the billion-dollar smog hoax" and five imported cars that could fill Detroit's economy-car gap.

30

MARCH 1987
PRICE: $2.50
We drove America's car to America's Cup in our 1987 March issue. We shipped a Chevrolet Corvette Down Under to drive 3,000 miles across the continent for the world's most famous sailboat race.

10

MARCH 2007
PRICE: $4.99
We drove what quite literally was an Italian Stallion in March of 2007 when we got behind the wheel of a 500-hp version of the Ford Mustang envisioned by Turin-based design firm Italdesign Giugiaro.

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Intake

R-LINE COMING? Our experience suggests that one of the juicier versions of this engine family should be fast-tracked for a midcycle update or R-Line upgrade.

2018 Volkswagen Tiguan

Volkswagen's Tiguan has always been a little too small, expensive, and European to dice with the segment leaders. To change that, the second-gen version grows 7.4 inches in wheelbase and 10.7 inches overall to accommodate an optional kiddie-carpool third row of seating. The only other compact three-row utes are Nissan's Rogue and Mitsubishi's Outlander.

Full specs aren't available, but *Motor Trend* sampled some prototypes in the Kalahari Desert and used a tape measure to estimate interior volumes. Our measurements indicate the third row is smaller than the Rogue's and larger than the Outlander's by about 4 percent each, the second is 13 percent bigger than both, and the middle row slides 7 inches forward to share the space available. Expect about 40 percent more cargo room compared to the existing Tiguan.

The MQB-based Tiguan gets a 186-hp, 221-lb-ft 2.0-liter turbo-four bolted to an eight-speed automatic with front- or 4Motion all-wheel drive. That's more torque and less horsepower than before, and with four adults on board it doesn't feel *Fahrvergnügen*-fleet like the big brother of a GTI should. An off-road package offers settings for snow, highway, mountain, and custom conditions, and VW will also offer continuously variable damping.

Expect this Mexico-sourced CUV to carry an entry price near the current vehicle's $25,860 when it goes on sale this summer. **Frank Markus**

SPECS **Price** $26,500 (est)
Vehicle Layout Front-engine, FWD/AWD, 5-7-pass, 4-door SUV
Engine 2.0L/186-hp/221-lb-ft turbocharged DOHC 16-valve I-4
Transmission 8-speed automatic
Curb Weight 3,800-3,950 lb (est)
Wheelbase 109.9 in
L x W x H 185.2 x 72.4 x 65.0 in
0-60 MPH 7.5-8.0 sec (*MT* est)
EPA City/Hwy/Comb Fuel Econ Not yet rated
On Sale In U.S. Summer 2017

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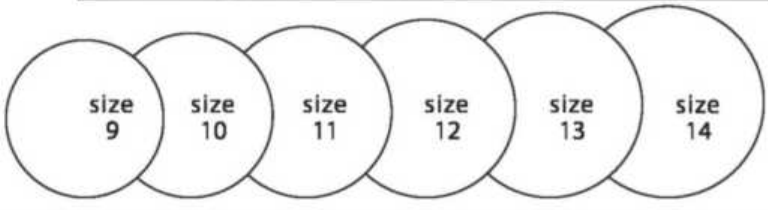

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Intake

2018 Volkswagen Arteon

FIRST LOOK

CONCEPTUAL ROOTS The VW Arteon is based on the Sport Coupe Concept GTE, the star of the 2015 Geneva show, but it ditches the concept's electrification.

Americans hate hatchbacks—unless said hatchback is fast and attached to a badass sedan like the Audi A7/S7 or Aston Martin Rapide. Volkswagen is poised to introduce a baller hatch for the middle class. Technically the Arteon replaces the CC in VW's lineup, but it leapfrogs it in size and prestige.

The Arteon arrives on the MQB platform measuring 2.0 inches longer than the CC, splitting the difference between Audi's A5 and A7 hatches. The added length improves rear-seat space, proportion, and stance. A 268-hp, 258-lb-ft 2.0-liter turbo and six-speed automatic spin the front or all four wheels. Chassis-wise there is a continuously variable damping option.

We sampled European- and American-spec Arteons on the rumpled pavement around Upington, South Africa, where the summer-spec 245/40R19 Pirelli Cinturato P7s on the Euro-spec car rode harsher and sounded noisier—especially from the back seat—than the all-season 245/45R18 Continental ProContact TXs fitted to the American one. With four adults on board, the performance didn't deliver on the baller looks and left us longing for V-6 oomph to justify the price premium VW will ask relative to a Passat V-6. Any VR6 in the portfolio would fit, and we hope the Chinese-market 300-hp 2.5-liter turbo gets adopted.

Look for 2.0-liter Arteons to arrive in the summer priced in the upper 30s, undercutting the A5 Sportback.

Frank Markus

Volkswagen is poised to introduce a baller hatch for the middle class.

SPECS **Price** $39,000-$42,000 (est)
Vehicle Layout Front-engine, FWD/AWD, 5-pass, 4-door hatchback **Engine** 2.0L/268-hp (est)/280-lb-ft (est) turbocharged DOHC 16-valve I-4
Transmission 6-speed automatic
Curb Weight 3,350-3,500 lb (est)
Wheelbase 111.6 in **L x W x H** 191.1 x 73.0 x 55.8 in
0-60 MPH 5.7-6.1 sec (*MT* est)
EPA City/Hwy/Comb Fuel Econ Not yet rated
On Sale In U.S. 2018

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The 2017 RAV4

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Intake

FIRST RIDE

2018 Mercedes-AMG GT Roadster and GT C Roadster

I'm standing in the hostile, bristling desert outside Las Vegas with Mercedes-AMG boss Tobias Moers and taking in a prototype of his new, topless AMG GT C. There's also a routine GT Roadster and a C63 S Cabriolet that have been thrown in for good measure. The zaftig nature of the original AMG GT's backside has appealed to me on a guttural design level, but the C variant redefines badonk. Call me Sir Mix-a-Lot. The GT C's butt is vented, and it looks fab.

You might note that we've seen this look elsewhere; the upcoming GT R (first seen in June) and the GT C share the same wide body kit (2.2 inches thicker, rear fender to rear fender). Turns out the vents—two vertical slits behind the rear wheels to remove hot air from the brakes and a horizontal one to vent heat from the GT R's racy exhaust pipes—are only for show on the GT C. But what a show. I couldn't take my eyes off the GT C's glutes.

Confused by the alphabet soup? Here's a primer. There are four versions of this AMG sports car: the GT, the GT S, the GT C, and the GT R. There are also five power levels. The C variant is launching only as a Roadster, but a hardtop GT C will be available in the future. The C doesn't stand for Convertible or Cabriolet, despite the insistence of some erroneous press reports. In Mercedes-speak, Roadster refers to a two-seat convertible, whereas Cabriolet is a softtop with a back seat. So what does the C in GT C stand for? Clydesdales, apparently, and 550 of them.

It's about all that horsepower. All AMG GTs use the now-ubiquitous hand-assembled 4.0-liter dry-sump

The Mercedes-AMG GT C redefines badonk. Its butt is vented, and it looks fab.

TWO REARS Here's a good look at what separates the backside of the GT Roadster from the GT C.

twin-turbo V-8 also known as M178. For you engine code nerds out there, the generally torquier versions of this motor are found in the C63 and new E63 and are labeled M177. In the AMG GT coupe, the M178 pumps out 456 hp and 443 lb-ft of torque. Confusingly, AMG GT Roadster's power figures are 469 hp and 465 lb-ft of torque. Why the difference between the two cars with the same name? I don't know. If I had to guess, AMG wants as much bandwidth for this product as possible. The lower the power, the lower the price point. The AMG GT S—the machine that won our Best Driver's Car honors in 2015—makes 503 hp and 479 lb-ft of torque. The GT C Roadster's engine is good for 550 hp and 502 lb-ft of torque, and all that twist is available from 1,900 to 5,750 rpm. The hardtop-only "Beast of the Green Hell" GT R generates 577 hp and 516 lb-ft of torque

Moers drives, and I ask questions. He tells me that the AMG GT Roadster is a prototype, and one of the first to roll off the assembly line. Moers says it has a different steering setup than the final production version. He also repeatedly apologizes for its copious rattles and squeaks.

From the passenger seat, the GT Roadster felt like a not-so-healthy preproduction AMG GT with the top cut off. As for that top, Moers caught me looking at my watch as I raised and lowered it, which is something you can do at speeds up to 30 mph. "Only takes 10 seconds," he says. "Nine by my watch," I respond. "Ten," he snaps back. This is a guy who folds his arms in disgust at red lights.

The GT C Roadster felt impressive. It was quick and powerful, though that's nothing new. There's a raft of other go-fast goodies, too—namely, the active air management system lifted directly from the big dog GT R. There are vertical louvers mounted below the front grille. When extra cooling isn't needed, they're closed to reduce drag and increase fuel economy. If the engine gets hot enough, the louvers crack open in less than a second.

I couldn't feel the louvers working, but I noticed the rear-wheel steering. The GT C feels dartier than the GT S. It seems to change direction more quickly and fluidly than its fixed-rear-wheel counterpart. It's impressive; a wider rear track and fatter back tires usually mean more grip but not increased dexterity. Also borrowed from the forthcoming GT R is an electronically locking differential, which should further help to put power down and change the car's direction. The seven-speed dual-clutch has reconfigured software and new physical gears: a shorter first gear for improved acceleration and a taller seventh gear and final drive for more efficient cruising.

The dark gray GT C is emotional, loud, quick, and sexy. What a little monster.

Jonny Lieberman

NEIN! Jonny and Tobias Moers couldn't agree on the time to raise and lower the top. Nine. Ten. Nine!

SANS ROOF Did AMG cut off the good part? The jury's still out.

SPECS **Base Price** $135,000-145,000 (est) **Vehicle Layout** Front-engine, RWD, 2-pass, 2-door convertible **Engine** 4.0L 469-hp/465-lb-ft / 550-hp/502-lb-ft twin-turbo DOHC 32-valve V-8 **Transmission** 7-speed twin-clutch auto **Curb Weight** 3,750 lb (est) **Wheelbase** 103.5 in **L x W x H** 179.0 x 75.8 x 50.2 in (est) **0-60 MPH** 3.7-3.9 sec (mfr est) **EPA City/Hwy/Comb Fuel Econ** 15-17/22-23/18-19 mpg (est) **Energy Consumption, City/Hwy** 198-225/147-153 kW-hrs/100 miles (est) **CO2 Emissions, Comb** 1.01-1.11 lb/mile (est) **On Sale In U.S.** Fall 2017

Intake

MIKE CONNOR

MTCONFIDENTIAL

Alfa Romeo's 4C is a no man's land of cars: not fabulous enough to make it a halo vehicle yet too narrowly focused to deliver buyers to a brand that's working its way back to relevance. That hasn't stopped Alfa from forming two teams to work on concepts that seem equally pointless. One group is evaluating a follow-up to the oddball, brick-shaped Zagato-bodied SZ of the early 1990s. The other is looking at the feasibility of reworking the next Maserati GranTurismo into an upmarket Alfa two-door along the lines of the 1996 Nuvola concept. **Speaking of Maserati,** the next-gen GranTurismo and GranCabrio twins, due in 2018, will be built on an all-new aluminum-intensive platform that will be shared with the all-electric Alfieri Coupe, due 2020. The Alfieri will be a high-performance EV, but the GranTurismo and GranCabrio will retain their V-8 engines. A V-6 is rumored, as are mild and plug-in hybrid versions. **The new 3.0-liter I-6 that will replace the existing V-6 across the Mercedes-Benz lineup** will be a mild hybrid. The engine will feature a 20-hp, 162-lb-ft electric motor between the flywheel and the nine-speed automatic. The engine will also be available with an electrically powered turbocharger, which will work with a larger, exhaust-driven turbocharger to virtually eliminate turbo lag. **The massive costs associated with Dieselgate** mean belt tightening across all VW Group brands, say Wolfsburg insiders, who report budget cuts and a demand for a 10 percent return on investment. This makes building a production version of the Bentley EXP 10 Speed 6 concept a tough sell. VW brass is expected to have a decision on the Bentley by summer. **Kia's new Stinger is a testimony to the persistence of Hyundai Motor Group design chief Peter Schreyer.** Five years ago, he began lobbying for the car. Now whispers in Seoul suggest a sedan version is coming in a year. Styling is said to be similar to that of the sedan concept shown at the 2016 New York auto show. But that was badged Genesis, not Hyundai. Does this mean Hyundai misses out?

2017 Land Rover Discovery

It was a day of firsts for two renowned British modes of transportation—a vehicle and a vessel—both almost ready for prime time. It started in the Scottish Highlands where the 2017 Land Rover Discovery navigated mud, rocks, and water. It ended aboard the HMS Queen Elizabeth, the largest warship ever produced for the Royal Navy.

In Scotland we drove right-hand-drive prototypes of the seven-passenger Discovery. By March, Land Rover will build U.S.-spec models for sale in late May. March also marks the end of eight years of construction of the 920-foot HMS Queen Elizabeth. With the exception of a short drive up the aircraft carrier's ramp—a publicity stunt but a great experience—our day was mostly off-road.

Although the outgoing LR4 was body-on-frame, the new Discovery features monocoque construction with an aluminum body and steel subframes. It has full-time four-wheel drive and a two-speed transfer case for high- and low-range gears as well as a four-wheel-drive system with a single-speed transfer box. Torque is split 50/50 between the axles.

Terrain Response 2 changes modes for different conditions, and All-Terrain Progress Control acts like off-road cruise control, assessing the terrain every 100 milliseconds and adjusting throttle, steering response, and traction control. A labyrinth air intake under the hood with a high inlet allows the vehicle to breathe when the grille is submerged up to a wading depth of 35.4 inches.

The U.S. gets the 3.0-liter supercharged V-6 (340 hp; 332 lb-ft) and the quiet 3.0-liter turbodiesel V-6 (254 hp; 443 lb-ft), each mated to an eight-speed automatic.

Land Rover has a well-earned off-road reputation, but the Discovery isn't invincible. We slid off the greasy track and couldn't regain momentum. With all the weight on one side, the support Defender was unable to winch us out until we triangulated the tow strap around a nearby mountain ash. **Alisa Priddle**

SPECS **Price** $50,985-$74,945
Vehicle Layout Front-engine, 4WD, 5-7-pass, 4-door SUV
Engines 3.0L/340-hp/332-lb-ft supercharged DOHC 24-valve V-6; 3.0L/254-hp/443-lb-ft turbodiesel DOHC 24-valve V-6
Transmission 8-speed automatic
Curb Weight 4,850 lb (mfr)
Wheelbase 115.1 in
L x W x H 195.7 x 78.7 x 72.7 in
0-60 MPH 7.1-7.7 sec (mfr est)
EPA City/Hwy/Comb Fuel Econ Not yet rated
On Sale In U.S. May 2017

TRADE-OFFS The second row in the Pacifica Hybrid doesn't fold, but the seats do have more padding.

2017 Chrysler Pacifica Hybrid

The 2017 Chrysler Pacifica Hybrid makes a lot of sense—head-slapping, why-didn't-anyone-do-this-sooner sense.

Pickings are slim if you want hybrid tech in a three-row family vehicle. There is the Volvo XC90 T8 plug-in hybrid, but it starts at $68,795, almost $26,000 more than the Pacifica—and the Chrysler has more than double the electric range. A $35,590 plug-in minivan (after the $7,500 federal tax credit) occupies rare white space, and it could be a game changer for families who want to avoid gas stations but love long trips.

The Pacifica Hybrid's 16-kW-hr batteries provide 30 all-electric miles, enough for the daily needs of many families. The 3.6-liter V-6 extends it another 500 miles for an EPA-official 84 mpg-e combined rating. The hybrid system seamlessly engages the gas engine when needed with no driver action required.

The V-6 runs on an Atkinson cycle and can tap its two motors for 260 hp combined,

Newcomer

and its Chrysler-designed dual-motor electrically variable transmission uses an innovative one-way clutch. The hybrid has a DC-to-DC converter instead of an alternator to power ancillary equipment, and one of the motors can start the vehicle. The batteries charge in 14 hours with a regular 110-volt outlet or two hours with a Level 2 charger. The vehicle monitors the fuel's age and turns on the engine to burn off gas to prevent it from going stale between fill-ups.

During a drive in a $47,885 white Platinum-trim Pacifica Hybrid around Santa Monica, California, and up canyon roads, a number of things became clear. The Pacifica drives on electricity whenever possible and can exceed 75 mph on just juice. It grabs additional power from the V-6 when needed to pass or climb a hill or when the battery is depleted and awaiting regenerative braking.

You can drop the minivan stereotypes; the Pacifica is legitimately fun to drive. The independent rear suspension, a wider track and stance, and a 350-pound battery pack under the floor improve the ride and handling immensely.

The batteries don't encroach into passenger space. Instead, they're in the bins where the second-row Stow 'N Go seats would normally stow; the third row still folds into the floor. The hybrid can't tow, and you can't get the vacuum, either.

To distinguish the hybrid, Chrysler replaced the hex-mesh grille with one that has flowing lines, and it gets unique 18-inch wheels and a signature color, teal, inspired by ice caves in Juneau, Alaska. It's in the stitching, wheels, badging, and logo on the charge port's door, and it's the color you want to see on the gauges and screen background because it denotes you're driving under electric power. Much like other hybrids, the screens allow you to gauge your driving habits, set the charging schedule, or access a map of charging stations.

Dealers started taking orders in December. It comes in two trim levels. Premium starts at $43,090, and Platinum starts at $46,090. With the $7,500 tax credit and some state and local incentives, it is a good deal.

Alisa Priddle

Drop the stereotypes. The Pacifica is legitimately fun to drive.

SPECS **Price** $43,090-$46,090
Vehicle Layout Front-engine, FWD, 7-pass, 4-door van
Engine 3.6L/248-hp/230-lb-ft Atkinson-cycle DOHC 24-valve V-6 plus two front electric motors, 260 hp comb
Transmission Cont variable auto
Curb Weight 5,000 (mfr)
Wheelbase 121.6 in
L x W x H 203.8 x 79.6 x 69.9 in
0-60 MPH 7.0 sec (*MT* est)
EPA Comb Fuel Econ (EV mode) 84 mpg-e
On Sale In U.S. Currently

We Say...

Mark Rechtin
REFERENCE MARK

Warning Signs from the showroom floor

The economy is rollicking along, with November reporting the lowest unemployment rate since 2007. The stock market is on fire, or at least it was in the weeks following Election Day. And new-car sales are in their sixth year of growth. So why are a lot of smart people looking concerned?

There are indicators that the good times might be coming to a halt. History repeats itself, and there are some signs that look familiar to the precrash days of 2007:

- A growing percentage of subprime auto loans being made;
- an extension of loan lengths to longer and longer terms;
- an increasing number of delinquencies and repossessions;
- and an increasing reliance on leases and big incentives to move sheetmetal off the showroom floor.

Taken singly, none of these factors would be cause for concern while auto sales sped well past 17 million units in 2016. But taken together, they represent a significant leveraging of consumer debt and a surge in consumers' inability to pay off their loans. That's bad news.

A big contributor to the concern is subprime loans, which are issued to those with poor credit scores. Usually a past bankruptcy means a customer has subprime credit. The fallout from the 2008 recession meant there were plenty of honest, well-meaning folks who were trying to get back on their feet but were tagged with that scarlet letter. And because of that, lenders have been aggressive in lending into this high-profit but high-risk sector.

But as we did a decade ago, and again now, we're seeing the rise of "fog-a-mirror financing." In other words, FICO score be damned. If you're flipping burgers a couple days a week, you can get into that Camaro SS today.

Another sign: When folks are flush, they pay cash. But we're running on two straight quarters of more than $1 trillion in outstanding auto loans. That's never happened before—and a big chunk of it is subprime.

Those loan terms are getting longer, too. It used to be that a 60-month loan raised an eyebrow because consumers often would be upside down on the loan—what they owed was more than the car was worth. Now 84-month terms are common because many consumers can only afford the lower monthly payment that longer loans allow. The loss exposure there is huge.

There is also a big push by automakers to keep their factories moving, whatever it takes. That usually means cash on the hood to help consumers make the down payment on the loan. Even some recently introduced vehicles that should sell on their merits are seeing incentives topping $10,000. One such vehicle is the Cadillac CT6, according to Automotive News.

A reliance on leasing also has come into play in nearly one-third of all new-car transactions. That many leases results in lots of lease returns into the used-vehicle market, and that churn drives down used-vehicle values. Those folks trading in an older vehicle they own to buy a new car will have to borrow more—and a desperate spiral begins.

In an interview, Hylton Heard, senior director of Fitch Ratings, which tracks these loan portfolios, urged to keep these warning signs in context. Although loan losses have sharply increased year over year, they aren't close to their record highs.

Heard offered a caveat, however: The big subprime players Fitch tracks—GM Financial and Santander—have only seen slight loss increases. But many smaller, more aggressive players who Fitch doesn't track are representing an increasing share of the market. And their losses are rising quickly.

How bad is it? The number of subprime loans 90 days past due is higher than it was during the early months of the 2007–2012 recession, according to the Federal Reserve Bank of New York.

Recently, both Toyota and Nissan declared "peak auto" for the U.S. market, signaling that they forecast future sales to be in decline. That's a major declaration of a lack of confidence in the American economy and its ability to sustain growth.

Granted, someone defaulting on a car loan isn't like losing his or her home. But these rising default rates are a sign of a potentially larger problem. They sky might not be falling, but it's certainly looking darker. ■

A big contributor to the concern is subprime loans.

Illustration Pep Montserrat

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We Say...

Frank Markus
TECHNOLOGUE

3-D Classes Showing the industry a new way to design and build cars

Kevin Czinger is a car guy—a former United States Marine, attorney, and merchant banker whose need for speed inspired the building of an early Mitsubishi Evo with all the go-fast bits. And although he loves raw performance, he knows the future of our crowding planet demands greener approaches to all kinds of transportation, so he helmed the star-crossed Coda electric car venture. That China-produced sedan gave him a close-up look at the environmental impact of producing cars—electric or otherwise—and it wasn't pretty.

Quoting Argonne National Lab's life cycle GREET model data, Czinger claims that more than three-quarters of the cradle-to-grave environmental cost per mile driven over the 150,000-mile life of a gas or hybrid vehicle is generated by manufacturing the vehicle and the fuel to run it. The same study suggests the toll manufacturing EV batteries takes on the environment is even worse. He reckoned there wasn't much he could do about fuel and battery manufacturing, but the status-quo system of stamping zillions of metal parts and electrically welding them together seemed ripe for a rethink.

His brainstorm: Employ 3-D printing technology to reduce the cost, complexity, mass, and environmental impact of vehicle manufacturing enough that a gas-burning, Ferrari-killing performance car could end up costing less to produce and being less taxing on Mother Earth than most cars on the road today.

He founded Gardena, California-based Divergent 3D to flesh out this idea. He combined metal 3-D printing with off-the-shelf carbon-fiber tubing and sheet goods to form a dramatically lighter and cheaper-to-produce rolling chassis that looks like a modern-day riff on the birdcage Maserati. Such structures can be optimized to accommodate any type of body, powertrain, and feature content. His company is also developing Divergent Manufacturing Platform, custom software that will greatly simplify the task of engineering such a structure to meet crash and other performance standards. In a nutshell, Divergent 3D sees its motherboard chassis and design software suite doing for the car business what the open-source hardware/software firm Arduino has done for electronics—making it vastly easier and cheaper.

Divergent's street-legal running prototype Blade uses 69 nodes, each of which are 3-D printed by laser sintering powdered aluminum to connect an intricate web of carbon-fiber tubes and honeycomb-aluminum or carbon-fiber sheer paneling—all off-the-shelf commodity parts. With 3-D printing, extreme complexity is free, and Divergent 3D's CAD-optimized prototype two-seat performance car structure weighs less than 100 pounds. A Mitsubishi Evo X engine—bored, stroked, and massaged by AMS Performance to 700 hp—and a Holinger six-speed sequential gearbox accelerate the 1,388-pound Blade to 60 mph in the low 2-second range.

A Ferrari-killing performance car could cost less to produce than most cars.

BLADE Kevin Czinger's street-legal proof-of concept prototype features tandem seating for two and cheek-wrinkling acceleration.

But it's not this blistering performance that has attracted a strategic partnership with France's PSA Group. It's the drastic drop in manufacturing cost and complexity that Divergent Manufacturing Platform promises. Here's what Czinger reckons it will cost to set up a factory for annual production of 10,000 units: 16 3-D printers, 10 flexible robots, 50 technicians, 20 additional staff, and a 100,000-square-foot building. That's $42 million for the factory and another $30 million in tooling.

Those numbers compare with $250 million to build a traditional factory plus $250 million for comparable conventional manufacturing tool-and-die equipment. By his accounting, the rolling chassis unit cost also comes in $500 cheaper (at $3,500), which brings the fully amortized per-vehicle savings to about $3,900. Imagine PSA's savings on the mainstream Peugeot or Citroën it plans to build this way within three years at 180,000 to 200,000 units annually. Much of that cost and emissions reduction comes by eliminating the paint shop. The aluminum and carbon-fiber chassis doesn't need it, and the unstressed composite body panels get molded in color or wrapped.

When it only takes a small fortune to get into the car business, Divergent envisions many 10,000-unit microfactories springing up around the country, which would create local jobs and promote local entrepreneurship—just like at the dawn of the automotive age when 1,800 automakers dotted the U.S. landscape. ■

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They Say

Mike Simcoe

HEAD OF DESIGN, GENERAL MOTORS

Interview

Mike Simcoe's rise as a designer with General Motors started 33 years ago at the automaker's Holden subsidiary in Australia. Following stints with GM's overseas operations and in North America, Simcoe became just the seventh person to assume the role of GM's head of design in July. We caught up with him at the Los Angeles Auto Show to discuss what the future holds for GM.

What was day one like, walking in as the new boss? Having a view from below versus a view from above is very stark. I told the team I am not here to tear the place down [to rebuild it] in my own likeness. I recognize the competence in the players.

How do you see your predecessor Ed Welburn's legacy? Finally making globalization something that design did naturally and not quite as forced anymore. Ensuring art came back into the business. The growth of confidence in design among the people. And allowing design to become a power in the organization again. Ed also had a unique ability to make people feel comfortable at all levels. In many ways, he set me up for this job. He was the person who brought me to North America the first time, back in 2004.

How would you describe your personal design ethos? Bold design, beautiful sculptural form, great proportion, incredible execution, and a deep-seated understanding of how a vehicle goes together and how to deliver a design. You can create a beautiful thing, but you have to make it real. There's been lots of noise about me being an engineer in a designer's clothes, but the reality is that I am a designer who can have an intelligent argument with an engineer about what I would like to deliver. Sometimes it's a bluff.

How do both engineers and designers get what they want in the current international regulatory climate with emissions, crash safety, pedestrian protection, and such? The design fails if one group—design, engineering, marketing—has the upper hand in the deal. It's not compromise; it's balance. Make it attractive. Make it function well. Make it safe. Make it an emotional vehicle that connects to customers. All those things are important and rely on different players.

Whose design do you admire, outside the car business? I admire Apple as a brand because no matter what they deliver, they deliver it in a way that customers are desirous or are emotionally attached. When you buy an Apple product, you buy into the club. And in some ways, Tesla is playing that same game.

Any other consumer products? I don't think design in consumer products has moved on very much. They're still delivering commodities in some way. Necessary, sure, but is there anything that stands out? No.

Describe each of the GM brands in five words or less, in the way you see it. Chevrolet: American, innovative, forward-thinking, ubiquitous. GMC: Strength, power, precision, functionally right. Cadillac: Precise, on-trend, desirable, and American. There's a theme here. Buick: Modern and sculptural. Don't need the five words.

Should there be any family resemblance among GM vehicles? No, other than the "American" piece. That's important. Our global players have an edge to them that we shouldn't shrink from. There's a spirit that you can see in the designs.

Say a GM product sells more volume in an overseas market than in America. At what point do design cues of the Chinese or German market ... Would we skew taste to a Chinese Buick versus a North American Buick based on market volume? No. The notion that we sell brands globally means that people in all markets can see everything all at once. When one market sees what another is doing, it expects the same whether it's a developing or a developed market. Customer desires are, on the whole, the same. There are things we do, such as adding a feature or taking a feature away, to make it work in that market, but the design doesn't change.

Anything else? Other people seem concerned that autonomy and electrification are going to change the way we design vehicles. And they certainly will but in the right way. Different materials, different propulsion systems, different architectural solutions, and perhaps the change people keep asking about: Why do all cars look the same and have the same proportion? That's going to start to change. Design will have a level of freedom it hasn't had in a long time. **Mark Rechtin**

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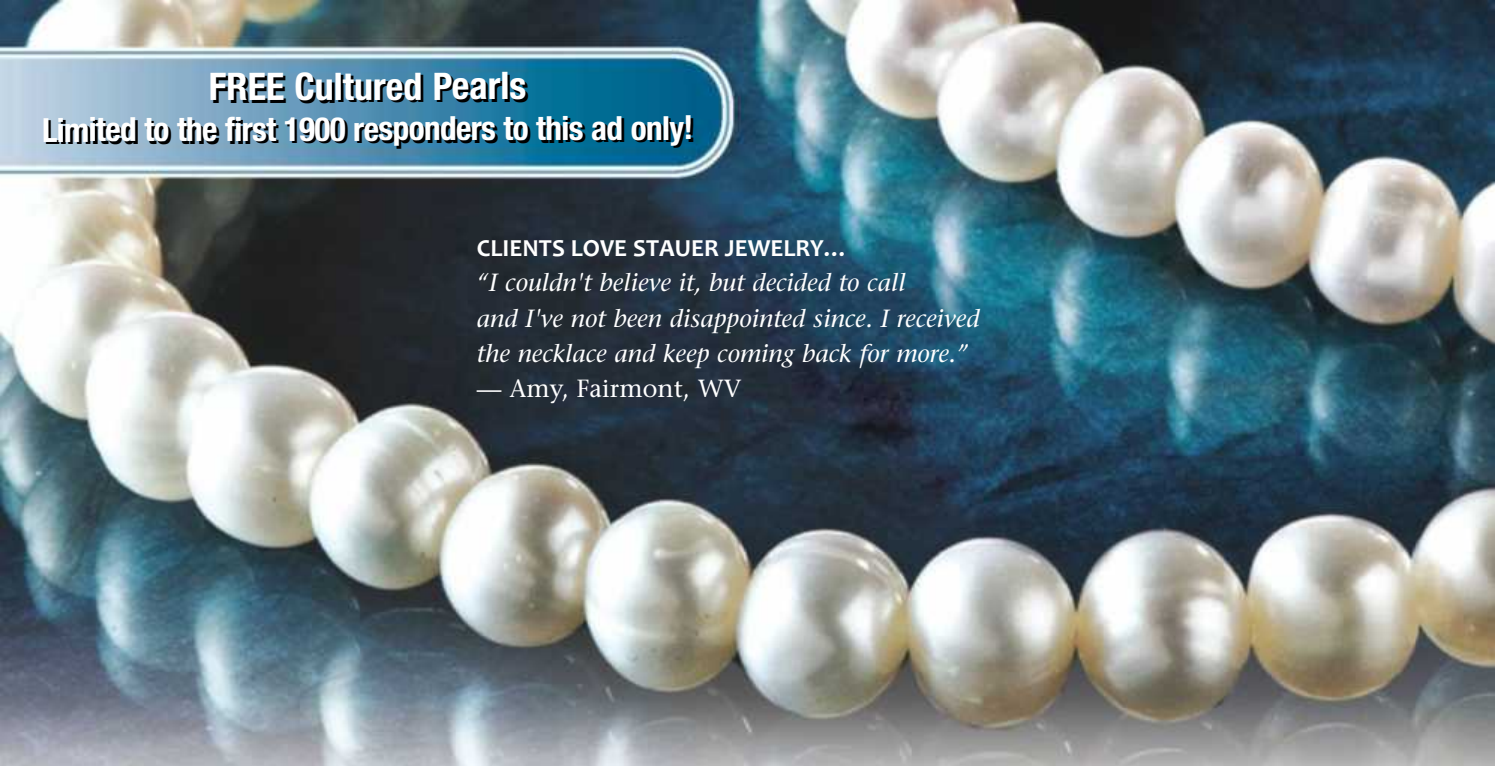

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Your Say...

ADVICE OF THE MONTH:
Put on your big boy pants and stop complaining.

READERS' THOUGHTS ON PAST ISSUES

Dieselgate discourse

Mark Rechtin showed no mercy to logic, torturing it beyond any reason ("Dieselgate and Dollars," December).

He opines in his column that Volkswagen does not deserve the severe punishment it got for exceeding diesel emission standards by "only" 14–15 times (rather than the reported 40 times). He goes on to say that many vehicles, especially other diesels, also exceed the limits, which are too draconian.

Well, Mark, I must have missed the report pointing the finger at all the other manufacturers. I've heard nothing from Mercedes regarding my diesel ML. In fact, a large number of diesels seemed to thrive under the new standards.

And you totally miss the main point of the malfeasance. VW not only missed the standard but also developed code to conceal the miss. In other words, they invested capital in lying to the public. If I were to engage in this behavior, I'd be writing to you from behind bars.

So go ahead and cry tears over VW's punishment. In my book, they're lucky to still be in business, and their senior staff is fortunate to have their freedom.

GARY FACKLER
MOUNTAIN HOUSE, CALIFORNIA

The column mentioned the penalty was appropriate for VW's intention to skirt the law. However, it has been widely reported that European regulators have discovered many diesel vehicles are operating over stringent regulatory limits.—Ed.

Mark seems to feel that these fines would be better spent by VW researching better low-emissions vehicles. Are you kidding me? VW already showed what they would do to improve their vehicles emissions—nothing. They knew of ways to clean up their cars and decided to pocket the profits instead. You don't give money to cheaters. You take it away. So when you ask, "Is it all just a cash grab?" why don't you ask VW that question first.

JIM ELLIOTT
VIA THE INTERNET

Ah, but where does it stop? What if the regulators' desire to collect a pound of flesh meant Volkswagen went bankrupt, putting tens of thousands of people out of work? The punishment must fit the crime.—Ed.

I'm not a lawyer, nor do I play one on TV. I do know, however, that the only indictments that big industry fears are threats of cash grabs. The only way to punish companies for deliberately harming consumers is the large-scale transfer of money to those harmed. With the jail time for corporate executives extremely unlikely, the only way to deter deceitful corporate behavior is the threat of a hit to a company's pocketbook.

It's unfortunate that these judgments are tax-deductible. We need to change the laws such that judgments are taxed and that corporate executives will face prison time when their companies do wrong. Those changes would ensure VW's deceit is not emulated, and the latter would ensure that companies actively deter it.

ERIK STALEY
CARLSBAD, CALIFORNIA

German authorities have raised the possibility of imprisonment for top VW executives, and a VW engineer has already pled guilty in U.S. federal court to conspiring to defraud regulators and car owners, which could carry a five-year prison sentence. —Ed.

READERS ON LOCATION

JIMMY CHOW, of Aiea, Hawaii (the only U.S. city with no consonants!), says aloha from one of his favorite reading spots on Oahu's North Shore. A reader after Ed Loh's heart if ever there were one.

Orange is the new black

William, William, William. Why do you foist your personal color taste foibles on gullible readers who breathlessly follow your appraisal of the Nissan Murano ("Verdict," December)? Four dissing comments to get your point across? You could have stamped your pretty little foot and refused the free 12 month use of the Murano if it so offended your aesthetic predilections.

On North American roads, where more than 70 percent of cars are black, gray, white, or silver, you have had the privilege of driving a 7 percent cohort in a fetching metallic brown, copper, or whatever, albeit for only a year.

This cutting-edge shade used by Nissan in its advertising is shared by the Ford Edge, Chevy Cruze, Dodge Challenger and Charger, that plebian Bentley Bentayga, and various McLarens. Good company, no? A trend, yes?

To demonstrate your acceptance of an actual color, may I respectfully suggest that in the future you wear a colored shirt instead of black in the article head shot. Maybe orange?

I have owned more than 50 cars and motorcycles in 65 years and have been entertained and enlightened by *Motor Trend* for several of these. Thank you.

COLIN TISSHAW
COQUITLAM, BRITISH COLUMBIA, CANADA

If William can't plausibly blend in with a dark forest, he's probably not going to like the color, so orange is about as bad a fit as possible. And yes, we do think he'd complain about the color if it were on a Bentayga.—Ed.

Big Test and the manual

When laying out a simple 0–60 chart, try to remember you are using the bar graph to measure a length of time, and the smallest length of time should have the shortest bar, not the longest ("Changing Times," December). The current configuration makes it appear the slowest

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cars are the quickest. I'm trying to figure out the concept behind the layout, and I cannot. If it is a measure of which car gets there first, as if 60 mph is the finish line of a rudimentary drag race, it is still backward; the shorter bar still seems to be the winner, as it got to 60 much closer to the start line than the faster car.

Also, do the people who complain about the death of the manual transmission deliver their letters by hand and written by a reed pen onto a papyrus scroll? The days of the "slushbox" are far behind, and it is up the media (you) to continue to educate people that the modern dual-clutch transmission is not the same. #emailforeverpapyrusnever

RUSS ROSENDALE
PITTSBURGH, PENNSYLVANIA

We debate that graph every time we use it. Clearly, not everyone sees the intent, which is akin to a photo finish snapped as the quickest car hits 60 mph. The quickest in that scenario would be ahead of the pack, the others spaced out based on how far behind they were at that moment. And in fact, we did get a letter from a guy complaining about the loss of manuals ... and he wrote it with a typewriter.—Ed.

The elements of style

I was disappointed to see Angus MacKenzie adopt the "ride-sharing" marketing spin of companies such as Uber and Lyft ("The Big Picture," December). Sharing, by definition, does not involve payment. If I share my slice of cake with you, I don't ask you to pay for it. If I charge you for some of my cake, it's called selling. No sharing of any kind goes on via ride-hailing platforms. They facilitate the selling of rides. The "sharing economy" is marketing spin designed to obscure what these businesses do so they can avoid rules and regulations that other businesses must obey.

BRUCE MIRKEN
SAN FRANCISCO, CALIFORNIA

Our copy editors spent an inordinately dorky amount of time trying to decide if ride-sharing should have a hyphen. They decided to defer to the rule dictating "time-sharing." We won't say that ride-sharing is nefarious marketing spin, but if the hyphen fits ... (Going forward, we'll use the term "ride-hailing" as our official style.)—Ed.

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Paul Fredrick

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TECTONIC

Amid the clatter of shoes on the polished terminal floor of Sendai Airport, north of Tokyo, our Toyota host turns to me and says, "This place"—he glances around at the airport—"was flooded by the 2011 tsunami." You would hardly know it, though, because the reconstruction is so thorough. In an only-in-Japan moment, we encounter a small robot directing flyers to either connecting flights or baggage claim. Dutifully listening, I turn right.

Locally, they call that 9.1 Richter-scale rupture in the ocean floor the Great East Japan Earthquake. It was the fourth most powerful movement of the earth ever recorded. The Pacific Ocean is now quietly lapping three-quarters of a mile away; Fukushima is 55 miles to the south, still burbling its radioactive brew. This is a country that united for several years to pick up the pieces of the devastation. Some parts of Japan remain shattered, but most citizens have seen a return to daily life. And for Toyota, that means staying on schedule for its most

Words *Motor Trend* staff **Photographs** Brian Vance, Robin Trajano, William Walker

TOYOTA TWINS
The production Camry XSE (left) will make its debut for the 2018 model year. Its NASCAR race car sibling (right) will make its first appearance at the Daytona 500.

SHIFT

"OUR BIGGEST CHALLENGE WAS TO FORGET"

important car, the Camry.

Tomorrow, I'll be driving prototypes of the next-generation Camry at the Sportsland Sugo raceway, located in the hills about an hour from the city. As we walk into the evening air, it's face-flinching cold. There's light rain in tomorrow's forecast. I pull my jacket's zipper up to its top tooth and lean into the wind. I was hoping for better weather to conduct an exclusive driving evaluation of the first entirely new Camry in more than a decade. This is no routine Camry update. This is the first version begot of the crucial Toyota New Global Architecture (TNGA) platform. The future of the world's largest automaker hinges on its success.

A day earlier, 5,400 miles to the east, I had been calibrating my Camry sensitivity by driving a current Camry V-6 in Newport Beach, California, land of palm trees and the still-slumbering San Andreas. My hands were lightly draping its steering wheel, searching for a pulse. Despite its reputation as the Muzak of Mobility, you have to concede that this

is a well-composed sedan. More like listening to The Eagles than elevator music—comfortable and reassuring, with clever lyrics and enough metronome back beat to keep you nodding to the pulse. But squeeze the rim, and you'll find comfortable leather over rubber and steel.

Back on the 35th floor of the Westin Hotel in Sendai, my jet-lagged internal wake-up call goes off at 3:30 a.m.—10:30 a.m. California time ... yesterday, somehow or other. I look at my phone's alarm set for three hours later and then stare at the ceiling totally awake. There's a sizzle of rain against the window.

When we finally locate the Sportsland Sugo racetrack, it seems strangely familiar, but I've never been here. Like Suzuka, Twin Ring Motegi, and Fuji Speedway, which I'd recently driven, Yamaha-owned Sugo feels simultaneously contemporary and ancient. The mid-'70s structures have lost their sheen to the rainy winters, and the steamy summers have prematurely aged the rest of the place, with moss growing in the block-wall crevices and dark tropical foliage crowding from everywhere else.

Toyota personnel, puffing small breaths of steam, are buzzing up and down the staircase to meeting rooms overlooking the slick-wet pits. The garages below are open and set up with folding chairs, whiteboards, tables with bags of chips and Kit Kat bars, and questionable coffee. A space heater wastes its time in the corner.

Occasionally I get a sideways glance. I'm not supposed to be here. This is an internal Toyota program to familiarize employees with an important new car. Three heavily camouflaged examples—a V-6, a four-cylinder, and a hybrid, are parked nose to tail in the pits, along with a current Camry and Accord as baselines. I try to blend in with the employees pairing up for an orientation ride with hired professional race drivers before taking the wheel themselves. I ask our red-jacketed instructor his background. "I race Ferraris," he says. "In February I'm going to Daytona to coach a Lamborghini driver." I sense his career frustration and my own with Lamborghini guys who hire driving coaches.

When it's my turn to try the older Camry, the instructor speaks succinctly. And then I notice his right foot pressing the carpeting as we near the braking cones, which bugs me at first. But after riding with my Japanese co-driver, I get it: Driving ability is a bell curve, and you never know. The Toyota employee is treating the apex cones like Kryptonite stalagmites. We trace a Pluto orbit around a corner's outer reaches, and I make a goofy face at the instructor, but he refuses to smile back. Nevertheless, it's I, a few minutes later, who suddenly hydroplanes midcorner and nearly understeers off the road. I shrug my shoulders and exclaim, "What the heck, the place is flooding!" He just nods and keeps pressing his right foot down before the braking points.

During a Kit Kat and coffee break, I sit in on a whiteboard roundup of key highlights and start jotting notes with frozen fingers. The roof and driver's seat height have descended about an inch, the hood by about 1.5 inches. (TNGA has sunk the center of gravity by 6 percent; the hoodline dropped for improved outward vision.) The wheelbase is 2.0 inches longer, though both the overall length and width expand by only 0.5 inch. The chassis is 30 percent stiffer. The wheels—ranging from 16-inchers on the base LE to 19 inches on the pull-no-punches XSE—have been lured out of their usual hiding in the wheelwells. The

The future of the world's largest automaker hinges on this car's success.

INTERIOR DESIGNER Adaptive cruise control is operated from the steering wheel and remains activated to a stop, but it requires a button to advance.

FIRST DRIVE Our Kim Reynolds was the only journalist allowed access to pilot the completely redesigned Camry.

RAINY DAZE There's nothing like driving an unfamiliar racetrack that's sopping wet while you're jet-lagged. Where's the coffee, again?

rear suspension is totally recomposed—proper double A-arms substituting for the old struts.

Its trio of powerplants are spanking-new, too, including a 3.5-liter D-4S (dual port and direct injection) V-6 and a long-stroke 2.5-liter Dynamic Force I-4, which has a thermal efficiency that can touch 40 percent. The latter also serves as the gasoline partner of the revamped hybrid power unit. Both the V-6 and the I-4 are coupled to eight-speed automatics (replacing the previous six-speed boxes), and the Hybrid SE adds a paddle-shift six-speed simulation. We're told to expect roughly 10 percent more power and 20 percent better efficiency.

I finally close myself in one of the prototype camo cars—thunk—then click the belt buckle home, adjust the mirrors, and head out onto the track, starkly aware I'm in an incredibly rare prototype on a slippery track that includes a fog bank on the front straight. Even angling

ENGINE MAKEOVER All three powertrains–V-6, I-4, and hybrid–are all-new.

FAMILY FACE The 2018 Toyota Camry LE trim receives a noticeably different lower grille.

out of the pits, though, something's noticeably right here. Without that whiteboard walkthrough, I might have thought it's an illusion. But now I know better. The presenter penned a picture of how the steering wheel angle can be aimed more directly at you, its tilt range noticeably widened, so it feels natural in your hands. He drew the revised pedal stroke, showing how it better aligns with your actual foot motion. You're never conscious of these things when you drive a car, but when they're wrong, they quickly become unconscious partitions between you and the experience.

Shedding speed approaching the first real corner feels automatic. And arcing into the curve, the seat's lateral bolsters quickly cup my ribcage. Exiting the bend, the upshifts are not only finger snaps but are the subtle, cool jazz ones where your fingers barely brush each other. The car feels vastly more sophisticated. But if there's one thing that most symbolizes its transformation from seven tedious generations of Tofu Camry driving dynamics, it's the brake pedal's crispness. No more mush—even the hybrid is better, although you still detect its inevitable transition to friction-brake stopping. Through a double lane change, the previous Camry and Accord lolled with noticeable roll and weight transfer; this car deftly snakes right through it. Right, straight, left. Bam, bam, bam. The steering responds with sensible loads. Its balance and coordination are so improved it feels like an Audi sensibility might have snuck into the Toyota R & D center. I'm too soft-spoken for the part, but if Colin Clive were sitting here, he might indeed have yelled "It's Alive! It's ALIVE!" Pulling into the pits, I hop out with a smile and now an appetite, so I go hunting for more Kit Kats.

Suddenly, there's an air of tension. Although vehicle chief engineers in Detroit can seem indistinguishable from the dude behind the counter at a NAPA Auto Parts store, Toyota's are treated like throwbacks to Imperial feudalism. They are informally called Princes of the Company. I hear that the Camry's CE, Masato Katsumata, has arrived and

CARROZZERIA CAMRY

EXTERIOR DESIGNER IAN CARTABIANO AND *MT*'S TOM GALE TALK

Tom: The sport model has a busy front end with disparate elements competing for attention.

Ian: We wanted the windshield to have this trapezoidal flavor—everything about this car is to enhance stance. We moved the Toyota symbol mark under and into the grille. In side view, the leading edge of the hood mimics an airfoil section.

Tom: The A-line starting aft of the front wheel opening and continuing along the doors transitions into the tail lamp graphic to provide a comforting visual continuity.

Ian Cartabiano's penciled hand is quickly building a graphite arc on the paper. They're light, metronome marks that quickly layer into a solid, confident line. Then another appears as Cartabiano extemporaneously explains what his hand is doing. "So we have this single lower aperture on the LE; it's simple, wide, and so low to the ground that it's hugging the street," he says. "But what happened is we made that base version way more sporty, so we had to amp up the XSE—so it was like, oh god, what are we going to do?"

After 18 years of designing and instructing at ArtCenter in Pasadena (where he graduated in 1997), his ability to talk while drawing is pretty much second nature. Look at his LinkedIn page, and under Experience you'll find just two entries—those years at ArtCenter and 19 years here at Calty Design Research in Newport Beach, California, where he is the studio's chief exterior and interior designer. His tenure spans nearly half of the existence of Toyota's 43-year-old studio. The place is

Camry designer Ian Cartabiano

is nearby. A serious-looking guy comes down the balcony toward me. He moves aside to reveal a jacketed, portly man with a balding head and a genuinely happy smile. Katsumata-san speaks a firm, careful English (his baritone reminding me of Toshiro Mifune in John Frankenheimer's *Grand Prix*). Yet it's punctuated by frequent laughs, and as we stroll over to one of the camoed Camrys, he keeps trying to hold his umbrella over me—making me feel like the prince.

And then we talk. "Previous Camrys have been white bread," he says. "If a person wants a car that doesn't break down, and they don't have experience with European cars, then you might say to them 'Buy a Camry; don't worry.'

CHIEF ENGINEER
The ever-ebullient Masato Katsumata is the man behind the machine.

We could probably have stayed in that world." Vehicle performance leader Yoichi Mizuno adds, "After seven generations of Camry, our biggest challenge was to forget. This one isn't a Camry. It's a new car." How new? Katsumata-san says, "I've been in charge since the about the fifth or sixth generation, which at the time we thought was a big change. With that one, the front engine cradle was new along with the upper body, but the rear of the undercarriage was unaltered. So overall, it was like 65 percent new. This one is 100 percent." As we walk around the car, he can't stop talking about it.

In the morning, we're heading back to California. I pack my suitcase and scan my itinerary for the coming weeks. Suddenly, my 35th-floor hotel room begins swaying back and forth. As a Californian, I'm used to this, but I'm not sure how to interpret a foreign earthquake. It turned out to be a 6.2, from the same area as the Great East quake. It was followed by a stronger 7.1 a week later, sending a small, rippling tsunami up small canal inlets.

Apparently, more than Camrys are alive around here.

It's fierce-looking and two-dimensional. It looks more like a theater mask than a car.

Tom: The beltline and side glass opening are distinctive and settled on the body side.

Tom: The concave area above the sill is effective at lightening the visual weight and also swelling back to the plane of the rear wheel. The upper hard line of the concave area could be softer for my taste and would allow other great elements to star.

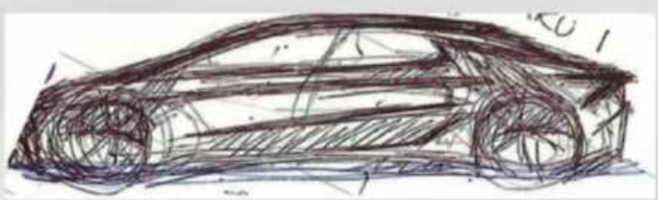
Tom: Wheels are pulled out to the sides of the car with tighter opening gaps. Wheel sizes range from 16 inches all the way to 19 inches.

Tom: The fender peak and surfaces of the upper quarter panel reduce the apparent height and heaviness above the front and rear wheels. The placement of these elements on the surface also aids gesture and gives the design forward movement.

CAMRY CONTEMPLATION
It's better to walk around the car to absorb its changing shapes.

home to him. It's ironic, then, that the most significant car of his career was designed while he was temporally relocated to Japan.

As the face of the Camry XLE grows on the sketch pad, I'm struck by something. He's not drawing the usual sheetmetal undulations that other car designers might. What's emerging is more like the stark creases of a harshly lit human face. It's fierce-looking and



IAN'S INSPIRATION
At left is Ian Cartabiano's very first drawing of the new Camry. Remarkably, its basic cues are already there. At right, a much more recent image.

The car is a tornado of ideas. It's constantly turbulent and chaotic but entertainingly expressive.

Tom: On both models, the side view of the bumper fascias, especially in the rear, disturbs the flow of surfaces.

two-dimensional. It looks more like a classical Japanese theater (Noh) mask than a car.

"We've talked about wanting people to identify the difference between the base LE and sporty SE grilles from 200 yards away," Cartabiano says. That's about the distance from you on a busy street to a nearby new-car lot. Suddenly, the sketch's Japanese mask association is less strange; like the exaggerated makeup on the faces of Broadway actors, they're meant to convey expressions all the way to the balcony.

Two years ago, at the Detroit auto show, company boss Akio Toyoda said his future cars would have a style that stirs people's emotions and makes them say, "I want to drive this." Although the Prius and Mirai might have rubbed some the wrong way, Toyoda's edict also erased the bland conservatism that's paused the pencils of Cartabiano's predecessors. Freeing Cartabiano, whose credits include the recent C-HR crossover and Lexus LF-LC show cars, as well as his bos, project chief deisnger Akira Kubota, to go dramatic.

The car is a tornado of ideas. Someone I used to work with told me of a (probably apocryphal) $1 million prize for anyone who could find a 1-foot section of manzanita tree that was completely straight (they have relentlessly curvy branches). Cartabiano's Camry is a manzanita tree. It's constantly turbulent and chaotic but entertainingly expressive. Step to the left or right, and either angle brings a whole new pattern.

The hood is a series of parting ripples; the A-pillar seems upside down, thinner at the bottom than at the top. "People hate how hard it is to see out of cars these days," Cartabiano says, "and they also give the windshield a trapezoidal shape that draws your eyes to the ground. Everything is about stance." Cartabiano draws a vertical line down the middle of the Noh mask, bisecting the front view. On the left is the more aggressive SE version with its inward-pointing horns and gaping side grilles. On the right, his pencil roughs out the ribbed Cheshire cat grill of the LE.

He grabs a new piece of paper and starts on a rear three-quarter perspective. Quickly, the light pencil marks harden into a chaotic pattern of lines. Some collide, and others ricochet, like the crease that originates at the center of the front wheel, ignores all the others, and

Ian: The C-pillar isn't flat. It has this strong character line that has a subtle shaping on top and has this core going all the way through that links to the rear shoulder. What's cool is it starts at the door handle, so the door handle creates the shoulder. That pillar creates that flow, but it also allows us to do that black roof feature.

Ian: From the side view, we bring the beltline down and sink the cabin into the body. These lines go all the way to the front, through the car, and have a focal point—so from every view you have this dynamic cone that allows this motion to go through the body. The other thing it does is kind of cool. From the side view, it makes the rear sporty and cuts off the corner. But from the rear view we can get the rear glass inside the shoulder. And these corners basically plant the car to the ground. Everything from the rear view is designed to enhance stance. To me this really captures the essence of the car.

Tom: The concave area above the sill is effective at lightening the visual weight and also swelling back to the plane of the rear wheel. The upper hard line of the concave area could be softer for my taste, and it would allow other great elements to star.

shoots toward the C-pillar. The side glazing abruptly sinks between the A- and C-pillars to signal its TNGA-driven lower center of gravity. "We bring the beltline down," Cartabiano says, his hand moving to illustrate, "and sink the cabin into the body. These lines go all the way to the front—all the way through the car to a focal point."

If this is a rolling sculpture, it's a block of clay that an artist has dug his fingers into and pulled along its sides, crazily wiggling his fingertips as he goes. As I'm thinking of the line in *Amadeus* where King Joseph II asks Mozart if there are "too many notes," Cartabiano adds more notes. By comparison, the current Camry looks like this version's early development embryo.

When we met up with chief engineer Masato Katsumata in Kentucky, we asked what his favorite angle is. "I like how the broad rear fenders go like this," he says as he waves his hand. "Like a woman's—ah, can I say this?" He leans forward and chuckles. In Japan, Kubota, Cartabiano's boss and the Camry's overall chief designer, initially answered "three hundred and sixty degrees!" then seriously said, "the rear three-quarters." Cartabiano is sketching that same perspective—his favorite, too. He puts heavy marks through the C-pillar. "That shape, in side view, creates a really dramatic pull," he says. "But in quarter view, you get this beautiful pillar graphic; it's 3-D, not flat, so there's this beautiful core going through the rear glass that shows speed." That scalloped C-pillar will be controversial, but it's clever in that it allows the profile to be formal and sporty. Toyota hopes this Camry will be perceived as two steps up in prestige.

The blacked-out roof option, available in XSE trims, starts at the scallop's upper crease. "If I black-out the roof, what's left is that speed character line," Cartabiano says. The black roof is limited to blue, white, and silver body colors. "My favorite is that gorgeous new white," he says. "Personally, the car I would get is the white XSE, black roof, and a red leather interior. Can you image that? A Camry with a red leather interior? That's pretty wild."

In a sense, Cartabiano has even signed his exterior design. "I was able to design the badging font," he says. "It's brand-new and kind of expensive because each letter is separate; the letters used to be combined into one badge. We went a little midcentury modern with it—compressed it and made it wide. That was cool." As Cartabiano draws, I consider that he's a guy who's just reshaped the country's best-selling car, drawn the face of a NASCAR stock car that in February could be seen by 11 million viewers, and formed the font that labels them. It's a remarkable design trifecta.

TOYOTA'S NASCAR QUEST

At 2 p.m. on February 26, the white-jacketed starter of the 59th running of the Daytona 500 will theatrically rip the green flag in a tight figure-eight pattern through the salty seashore air. The roar of 320 cylinders will cannon down the bending grandstands as a stampede of 40 stock cars swivel onto the banking and surge toward the checkerboard start/finish line.

Yelling the loudest will probably be Toyota Camry chief engineer Masato Katsumata—as well as Ian Cartabiano's design team in Newport Beach, California, the test drivers and engineers at the Toyota Arizona Proving Ground, and umpteen employees at Toyota's Lexington, Kentucky, factory, where the new Camry's TNGA assembly process is getting set for production. Although the car will have made its debut 49 days before at the North American International Auto Show in Detroit, this is really its big-time national how-do-you-do. Plus, it's a big, fat risk.

Production of the sedan won't begin until May. And with first impressions being everything, the memory of nabbing last year's top three spots in the closest finish in Daytona 500 history makes it a lot easier to look bad than good.

I'm familiar with Toyota Racing Development in Costa Mesa, California, where I've heard the shriek of its racing engines on dynamometers on Baker Street (a short walk from my first job, polishing cars at the defunct Briggs Cunningham Automotive Museum). But entering TRD's Charlotte, North Carolina, facility is a puzzle. William Walker, Carlos Lago, and I hear what sounds like a racing engine behind doors labeled Do Not Enter. In the main office, people at workstations glance up at a lap time leaderboard on the wall as they call out across the room to colleagues, some with their heads in their hands, others crossing their outstretched arms in the international gesture of really bad oversteer.

Technical director Andy Graves says that they don't exactly make anything in Charlotte. They periodically develop a new race car, such as the new Monster Energy Cup car we're examining (code-named Project X) and ping-pong ideals and realities with the Calty design studio team in California, who initially imagines the appearance. They also conduct tests at the local wind tunnels, such as the 130-mph, 2,200-hp, AeroDyn facility, which is essentially a stock car–specific tunnel. (It's walls are shaped just for these cars.) And they dance the countrified Kabuki with NASCAR officials to certify its all-important aerodynamic shape. Which—bizarre to my Formula 1–attuned eyes—requires staying within a performance box that limits how low drag can be and how high downforce can be. Graves says that the new Camry passed on its first try (with Chevy and Ford engineers watching). But after this, it's up to Toyota's teams—Joe Gibbs Racing, BK Racing and Furniture Row Racing—to build their own race hardware. TRD is an engineering support squadron—an in-the-field tech crew of vehicle dynamics engineers and tire and aerodynamics experts—there to give Toyota's teams the sharpest edge.

Graves walks us around the new 2018 Camry Monster Energy Cup car, and he points out details of its all-crucial aerodynamics, given that the chassis is a regulation design and there's not much latitude with the 358-cubic-inch iron-block, aluminum-head, pushrod V-8 with fuel injection (of a primitive sort).

DESTINATION DAYTONA Although the car's structure is defined by NASCAR's rules, the dash is now digital.

TUNNEL VISION The AeroDyn wind tunnel is tailored for NASCAR work. The smoke trace is actually propylene glycol—what's used for vaping.

We hear what sounds like a racing engine behind closed doors.

"We've worked a lot with Calty before, so we've been able to keep much of this Camry's styling," Graves says. The SE-version's "horns" have been relaxed, and its deep-set side intakes are less so. In fact, all the air openings are sealed (grille stickers create an illusion), but then we notice a small rectangular gap. "That's the only cooling slot. It's the location for the superspeedways, Talladega and Daytona." Graves explains that NASCAR mandates it to be at bumper level, discouraging two-car drafts. "If they're too close for too long, it's blocked, and the second car overheats."

He then points to the rules-defined front wheel opening lip, a critical aerodynamic tripping point. The air has to stay attached along the car's sides while the wheel's fore-aft positioning controls how much high-pressure air escapes ahead of it and how much crucial low pressure gets retained behind it. At the rear, we examine the car's left and right flanks. I'm shocked—they're not symmetrical. Starting at the rear wheel's axle line, the driver's side bends toward the car's center while its counterpart is stepped away, toward the wall. I feel dumb for not noticing this earlier. In plan view, it creates a wing effect, constantly pulling the car to the left. Aware of this, AeroDyn's wind tunnel can be adjusted to measure angles of attack, ranging from 3 degrees to the right and 5 degrees to the left. (The body-work is unchanged for the two road courses—Watkins Glen and Sonoma Raceway—making the cars handle asymmetrically.) TRD also plays an important role by working with teams to tune the car's "unregulated" underbody aerodynamics, which can be scrutinized if one car gets too fast.

Another asset is TRD's giant driving simulator (based on a McLaren design), which was all the noise when we arrived. Team drivers regularly practice on it while their engineers test chassis and tire setups. (It's a full physics model.)

It happens that this is the one week per year that all of TRD's Charlotte employees are cycled through just for fun, and their times are awkwardly flashed on that board screen for everybody to point at. Graves leads us inside. A driver, in a moving half-cockpit, is careening around an oval. His physical "car" is angling and sliding side to side as the simulator operator resets everything every time he smacks a wall. The out-of-register, wrap-around 3-D projection is a bit disorienting without the goggles, but everybody chuckles at the big smacks anyway. It's a whole different reality than the pressure-cooker start of the real deal, come February 26, when those walls won't be digital and the racing world's eyes will be on the Camrys these guys have created.

TWISTED TAIL The stock car's rear is cocked to the right to create a constant leftward lateral force.

ALMOST INCOGNITO The Dutch license plate was meant to separate this high-speed Camry missile from the other 8 million champagne Camrys in South Florida.

CAMRY-PALOOZA

MOTOR TREND TALES OF AMERICA'S BEST-SELLING CAR

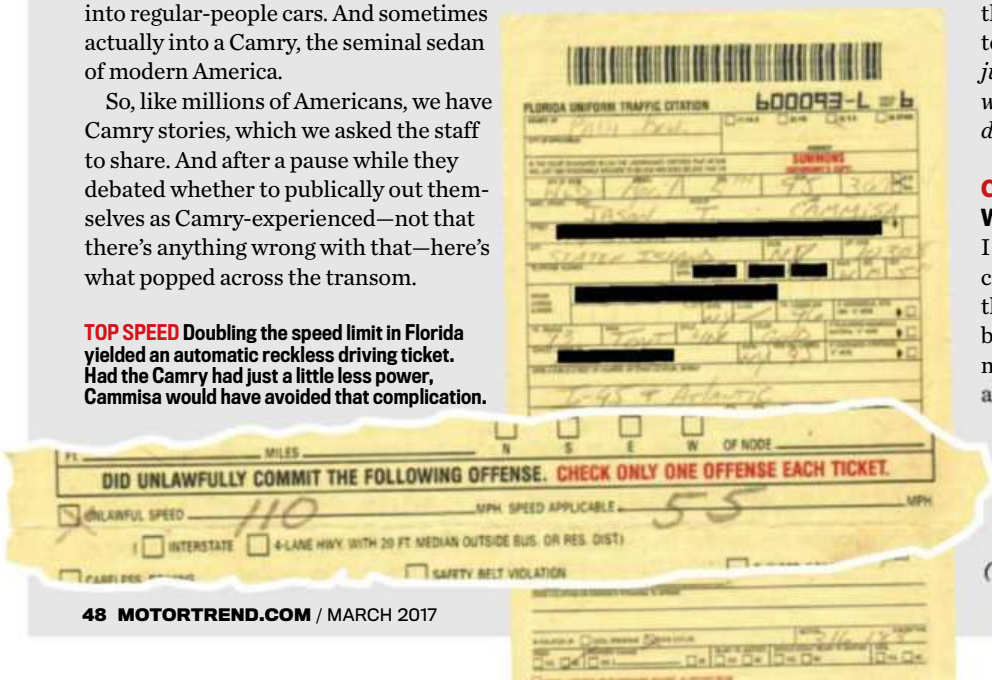
Despite our nonstop globe-trotting lifestyles, which regularly whisk us away to drive the planet's coolest, most exotic cars, the fact is, none of us can actually afford that bottle of Chateau Margaux served during the press dinner, much less the car we're there to test. Because under our Nordstrom Rack sport coats, we're journalists, not hedge-fund managers. Somewhere on the 405 freeway as we head home from our Walter Mitty day jobs, our horse-drawn carriages poof into mice and pumpkins. Or more accurately, into regular-people cars. And sometimes actually into a Camry, the seminal sedan of modern America.

So, like millions of Americans, we have Camry stories, which we asked the staff to share. And after a pause while they debated whether to publically out themselves as Camry-experienced—not that there's anything wrong with that—here's what popped across the transom.

Jason Cammisa,
Senior Features Editor April 5, 1995, in Palm Beach County, Florida. I-95 at 3 a.m. Gold 1993 Camry LE four-cylinder. At full throttle, the car would do 106 mph in D then shift into fourth (top) gear and maintain that speed. However, if I clicked the OD Off button, which locked it in third, I could get to an indicated 112 mph and stay there. Which I did. For the entire way from West Palm to Delray Beach.

I thought nothing of the Ford Mustang 5.0 that eventually began tagging along 12 miles North of Delray. Turns out it he was an undercover cop, and it took that long to run my plate. So the blue lights came on, the guns came out, and three backup FHP cars arrived on scene.

I learned more than one thing that night. But chiefly that 112 mph on the Camry's speedometer was an actual 110. And that doubling the speed limit in Florida gets you an appointment in criminal court with a public defender. Also, that the barrel of a gun pressed to your temple is very cold. (*Explaining to the judge that your speedometer calibration was meant to void inadvertent speeding didn't work, then?—Ed.*)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SAFETY BELT VIOLATION

TOP SPEED Doubling the speed limit in Florida yielded an automatic reckless driving ticket. Had the Camry had just a little less power, Cammisa would have avoided that complication.

Carlos Lago,
Writer, Host, Producer at Studio TEN
I learned to drive a manual in my mom's champagne-colored 1996 Camry. She got the stick for its better fuel economy and because it would be harder to steal. (How many people know how to row the gears anymore?) I started out just keeping it in first gear, depressing and releasing the clutch on a straight road. Soon afterward, somehow, oddly, strangely, the engine blew up. My mom has never been sure how that happened. *(Consider this a confessional.—Ed.)*

FAST 'N' CHEAP

ICE RACING

A REASON TO LOOK FORWARD TO WINTER By Frank Markus

I DID IT

SOURCES

ICE CAR There are no fussy NASCAR aero profile templates or spec engines to worry with in this series, but this one needed more aggressive light-weighting.

Frank Markus Technical Director

(Frank, who's famously good with math, found a way to actually make money from racing a Camry.—Ed.) *Motor Trend* was working on a feature about cheap ways to go racing in the winter of 2003 and 2004, and I raised my hand to go ice racing. The Michigan Ice Racing Association occasionally devolves into demo-derbies, so I headed to a local junkyard and asked what they had that ran. "1984 Camry with a stick for $300?" Perfect! The poor thing's rockers and fenders were totally rotted out, and apparently its nurse owner had run over some obstruction that kinked a lower lateral suspension link, giving it a hula-hips motion. Several whacks with a 50-pound sledge worked that kink right out. The car was too heavy to run up at the front, but she held up well and finished the season. That spring I donated it to charity and got a receipt for its Blue Book value of—wait for it—$1,800.

Erick Ayapana
Associate Online Editor

I had a good friend in college who had a hand-me-down fourth-gen Camry: dark metallic green with tan interior and gold-plated emblems, which seemed to be the hot look for Japanese sedans. It did a great job of taking us to Vons market and hauling our beer and Totino's pizza. Like many San Francisco cars, it was full of blemishes. I can't remember if mine had a dented bumper. But apparently, "the Camry Dent" is a thing—there are Facebook pages dedicated to the phenomenon. *(Maybe it's Camry drivers who've prompted these mandatory backup cameras.—Ed.)*

Jonny Lieberman, Senior Features Editor

Two things come to mind concerning my ex-girlfriend Nancy's 1985 Toyota Camry. One was while we were driving aimlessly on a vacation through Northern California. Out of nowhere, we both looked up and saw a beautiful hawk. Just as we were both saying, "Cool, hawk!" the beast dive-bombed us. It smashed into the windshield, shattering it and covering it with blood. I slammed on the brakes and got out of the car to look for the wounded bird, but it was nowhere to be found. Weird.

Later, the car was stolen in San Francisco. The cops found it a day or so later. However, it had been used in a shooting, so they had to keep it as evidence. Why a 1985 Camry? Easy to steal, a sunroof, and the panels on the backs of the front seats come off to easily stash your handguns. People in the drive-by shooting industry coveted Camrys. Evidently, the intended victims fought back; the Camry had a couple of bullet holes in the trunk. The kicker? The cops recovered it with the roof open, and it sat in an open-air impound lot for more than a month. While it rained. The Camry was declared totaled. *(Just another typical Lieberman vacation.—Ed.)*

ROAD TRIP Camrys aren't fun? Try college road tripping one through NorCal and Oregon. Just watch out for birds of prey.

Angus MacKenzie
International Bureau Chief

They say you never forget your first. I drove my first Camry 30 years ago, just outside the town of Mudgee, New South Wales. It was one of the first Australian-made Camrys, and this one inexplicably suffered from torque steer. The puzzled Toyota Australia engineers took these pilot-build test cars back to the factory and tore the front suspension apart. The tie rods had been incorrectly installed, throwing off the steering geometry.

We didn't think much of the Camry back then. Aussies liked big rear-drive, six-cylinder sedans, so it was destined to be a bit player. We were wrong.

Mark Rechtin Executive Editor

I owe my career start to a Camry. We were a Camry family ... for six months. The suspension settings on our new 1992 Camry were miscalibrated, and it resulted in a horrible ride. It was worst on my dad's Harbor Freeway commute (which ironically took him right past Toyota USA headquarters). Being an engineer, Dad started asking around our Palos Verdes neighborhood, where everyone seemed to have a new Camry and the same ride issue on L.A. freeways. It irked him so much that he took his complaint to the top of Toyota USA and Toyota R & D—with no satisfactory answers forthcoming. So he sold it. Meanwhile, I got an interview at *Automotive News*, and when they asked for a typical story tip, I told the editor about the "Camry chop." I got the job.

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Leading from

Words Chris Walton **Photographs** Julia LaPalme

The CR-V has been the best-selling SUV in the U.S. since its introduction two decades ago. With a record like that, changing its appearance, much less a majority of the parts, is risky, so complete overhauls like this are rare.

With a new platform, sheetmetal, interior, and almost everything else, the CR-V is a bold but necessary step. Honda has been rightly criticized for playing it safe with its so-called redesigns. But the new CR-V proves the company still has the spark that first drew our admiration.

THE LINEUP The 2017 CR-V grows in every exterior and most interior dimensions. The wheelbase is 1.6 inches longer, overall length has increased 1.2 inches, width and height have grown by 1.4 inches, and ground clearance is up by 1.5 inches. Despite this growth spurt, Honda shed 50 to 150 pounds from the last-gen CR-V,

RISKY BUSINESS: HONDA RE-ENGINEERS AND REISSUES A BEST-SELLER

the Front

depending on trim, and its weight bias is shifted slightly rearward. Inside, a slimmer A-pillar improves visibility, headroom increases by a fraction of an inch, front legroom remains generous, and rear legroom stretches by 2.1 inches.

Honda paid particular attention to the cargo area. Its volume grows by 2 cubic feet with all seats occupied and by nearly 5 cubic feet when the rear seats are stowed (75.8 cubic feet total). That makes it a class leader. A new full-flat floor comes in at just over 5 feet of length. The rear cargo floor also has a two-tiered position, and a hands-free "kick" power up/down liftgate is available, as well.

The 2017 CR-V has aluminum wheels and four-wheel disc brakes, and it's available in front- or all-wheel drive (for $1,300 extra). The SE is gone, and only the LX trim carries forward the aged 184-hp, 180-lb-ft 2.4-liter I-4. The price spread is almost $10,000, from $24,945 for an LX FWD to $34,595 for a Touring AWD. As is Honda's way, there are no options per se but five distinct trims with escalating feature content.

Initially the CR-V was aimed at the frugal shopper (now covered by HR-V), but the midgrade EX and higher trims are anticipated to account for 75 percent of sales. The EX starts at $27,595. That gets you the new 190-hp, 179-lb-ft 1.5-liter turbocharged I-4, which is proliferating across the global compact platform. All CR-Vs get a continuously variable transmission; however, the EX and higher trims get Honda's latest CVT, which we praised in the turbocharged Civic for its quick, direct response.

Standard equipment includes a new active-shutter grille, which improves aerodynamics and thus fuel economy, a capless fuel filler, LED taillights and running lights, automatic climate control, active noise cancellation, a multiangle rearview camera, and six airbags. Even the base audio unit has USB and Bluetooth connectivity. However, the clever LaneWatch blind-spot camera is a casualty. Instead, Honda Sensing comes standard on EX and above. This comprehensive camera- and radar-based system consists of adaptive cruise control with full stop/start ability, forward collision warning with automatic braking, lane departure warning with effective lane keeping assist, and blind-spot warning. With automatic high-beams (full LED headlamps on the Touring), a new driver-attention monitor, and rear cross-traffic alert (Touring), the 2017 CR-V should once again earn IIHS Top Safety Pick+ and NHTSA five-star ratings.

To say the ever-vigilant (but driver-defeatable) system affords an added level of safety from distracted driving (theirs and yours) would understate its prowess. We used the safety suite on a stress-reduced 400-mile drive from Central California south to the inevitable traffic in L.A. proper, and we arrived feeling like the trip was shorter and more enjoyable.

POWERTRAIN That rubber-band feel of other CVTs doesn't apply to Honda's new version, especially when paired to the 190-hp 1.5-liter turbo. The base LX uses the previous CVT, and the 2.4-liter engine maxes its twisting forces at close to 4,000 rpm, so it has to spin up to get there. But the new turbo virtually matches the 2.4's torque at half the revs, and its revised CVT features a twin-damper lock-up torque converter. This means the tachometer often hangs out happily at 2,000 rpm, propelling the CR-V with ease. Squeeze the throttle, and the needle jumps to access horsepower, which peaks at 5,600 rpm, then just as quickly it drops back to its happy place. It almost acts like a two-speed

Best of Both Worlds?

One of the 2017 Honda CR-V's many positive marks is its fuel economy—the best-selling crossover is quicker than almost everything in its class yet also manages respectable efficiency.

Running a 2017 Honda CR-V Touring AWD with the 1.5-liter turbo-four through our Real MPG tests yielded 21.9/34.2/26.1 mpg city/highway/combined. In our 2016 comparison of nine small crossovers, that combined number would have been second, behind only the 2016 Toyota RAV4 AWD.

Most 2017 CR-Vs will be powered by the 1.5-liter turbo-four. With that turbo, the CR-V is remarkably quick for a spacious crossover—in fact, it would have been the second-quickest model in that comparison, behind a six-cylinder Jeep Cherokee.

Put it all together and the 2017 Honda CR-V is still spacious, quick, and more modern than before, but its real-world city mileage might be more "top half of class" than "class-leading." **Zach Gale**

HOW NEW?
We're not sure of the metric—by weight, by cost, or even by part—but Honda says the 2017 CR-V Touring is 90 percent new.

automatic. How refreshing it is that we don't need a V-6 to make CVTs tolerable.

At the test track, the new engine and transmission were top performers, posting a 0–60 time 0.8 to 1.0 second quicker than previous CR-V Touring AWDs. At 7.5 seconds, the turbo CR-V is one of the quickest in its class. The new disc brakes and electric brake booster are both larger than before and bring the Honda to a halt from 60 mph in 116 feet. That's 3 to 5 feet shorter than before, and it did this with narrower tires and without overheating and fading as some past CR-Vs have. The 2017 chassis enhancements didn't improve the figure-eight lap time of 27.9 seconds. That said, we noticed the directness of the new dual-pinion power steering with a quicker ratio (12.3:1 instead of 15.6:1). The CR-V's wider front/rear track, a new rubber-isolated rear suspension subframe, and a revised AWD system, which sends up to 40 percent power to the rear wheels (there's no AWD lock, however), improve reflexes, precision, and ride quality. But it was the new and overly conservative electronic stability control that slowed our figure-eight time. Honda calls it Vehicle Stability Assist and Agile Handling Assist, which together use the brakes to reroute power and mitigate skidding. We wish there were an all-off mode so we could fully appreciate all the work that went into the new chassis.

REAL MPG For 2017, EPA-estimated fuel economy varies by up to 3 mpg in each city/highway/combined category. That depends on engine and driveline, from the thirstiest 25/31/27 mpg (LX with the 2.4-liter engine and AWD) up to 28/34/30 (EX, EX-L, and Touring with the 1.5-liter and FWD). Our Real MPG measured 34.2 mpg on the highway, eclipsing the EPA's 33-mpg estimate. What's more impressive is that this result shows a 6-mpg improvement over the 2016 CR-V Touring AWD. Maybe those new grille shutters really work. Unfortunately, it still struggles in the city. We measured 21.9 mpg—5 mpg below the EPA's 27-mpg rating. In the end, our 26.1 combined result still falls well short of the EPA's 29-mpg estimate but shows close to a 2-mpg improvement compared to the outgoing model.

WE CAN SAY IT PLAINLY We are proud of Honda. Our Touring trim's interior would look at home in a luxury SUV. The appearance, materials, features, and safety systems lead the class by a wide margin. The downsized turbocharged engine and revised CVT could've been flops. Yet their improved performance and efficiency put the combo near the top of the segment. The chassis improvements, although not empirically better on the track, improve real-world driving. The 2017 Honda CR-V piled on the premium and made it quieter, quicker, more enjoyable, and safer—all for about $300 more than the outgoing model. Any concern that Honda might coast can be put to rest. They intended to lead from the front. And they have done precisely that. ■

2017 Honda CR-V Touring AWD	
POWERTRAIN/CHASSIS	
DRIVETRAIN LAYOUT	Front-engine, AWD
ENGINE TYPE	Turbocharged I-4, alum block/head
VALVETRAIN	DOHC, 4 valves/cyl
DISPLACEMENT	91.4 cu in/1,498cc
COMPRESSION RATIO	10.3:1
POWER (SAE NET)	190 hp @ 5,600 rpm
TORQUE (SAE NET)	179 lb-ft @ 2,000 rpm
REDLINE	6,500 rpm
WEIGHT TO POWER	18.3 lb/hp
TRANSMISSION	Cont variable auto
AXLE/FINAL-DRIVE RATIO	5.64:1/2.28:1
SUSPENSION, FRONT; REAR	Struts, coil springs, anti-roll bar; multilink, coil springs, anti-roll bar
STEERING RATIO	12.3:1
TURNS LOCK-TO-LOCK	2.3
BRAKES, F; R	11.1-in vented disc; 10.2-in disc, ABS
WHEELS	7.5 x 18-in cast aluminum
TIRES	235/60R18 103H (M+S) Hankook Kinergy GT
DIMENSIONS	
WHEELBASE	104.7 in
TRACK, F/R	62.9/63.5 in
LENGTH X WIDTH X HEIGHT	180.6 x 73.0 x 66.5 in
GROUND CLEARANCE	8.2 in
APPRCH/DEPART ANGLE	20.8/24.8 deg
TURNING CIRCLE	37.4 ft
CURB WEIGHT	3,478 lb
WEIGHT DIST, F/R	57/43%
TOWING CAPACITY	1,500 lb
SEATING CAPACITY	5
HEADROOM, F/R	37.8/38.3 in
LEGROOM, F/R	41.3/40.4 in
SHOULDER ROOM, F/R	57.9/55.6 in
CARGO VOLUME, BEH F/R	75.8/39.2 cu ft
TEST DATA	
ACCELERATION TO MPH	
0-30	2.8 sec
0-40	4.1
0-50	5.6
0-60	7.5
0-70	9.8
0-80	12.6
0-90	16.2
0-100	20.7
PASSING, 45-65 MPH	3.7
QUARTER MILE	15.8 sec @ 89.0 mph
BRAKING, 60-0 MPH	116 ft
LATERAL ACCELERATION	0.81 g (avg)
MT FIGURE EIGHT	27.9 sec @ 0.60 g (avg)
TOP-GEAR REVS @ 60 MPH	1,750 rpm
CONSUMER INFO	
BASE PRICE	$34,595
PRICE AS TESTED	$34,595
STABILITY/TRACTION CONTROL	Yes/Yes
AIRBAGS	Dual front, front side, f/r curtain
BASIC WARRANTY	3 yrs/36,000 miles
POWERTRAIN WARRANTY	5 yrs/60,000 miles
ROADSIDE ASSISTANCE	Purchased separately
FUEL CAPACITY	14.0 gal
REAL MPG, CITY/HWY/COMB	**21.9/34.2/26.1 mpg**
EPA CITY/HWY/COMB ECON	27/33/29 mpg
ENERGY CONS, CITY/HWY	125/102 kW-hrs/100 miles
CO2 EMISSIONS, COMB	0.66 lb/mile
RECOMMENDED FUEL	Unleaded regular

MOTOR TREND REAL MPG

VELOCITY RAPT

Words Benson Kong
Photographs Brian Brantley

FORD'S OFF-ROAD ROCKET TRANSFORMS THE TRUCK.

It's taken more than four years to get to this moment. Slithering in the dirt around scattered trees, the winter sun beaming through the leaves, a dust wake in the rearview mirror, a sumptuous V-6 growl echoing through the extended cabin—we've come a long way.

We have at our disposal the shortest F-150 SuperCab you can buy or pine for, showing off a length difference of nearly a foot (11.9 inches) over the next-most compact extended-cab F-150. This pickup cab and bed combo—2+2 doors with the 5.5-foot-long shorty box—is only part of what makes the new Ford F-150 Raptor so exceptional.

The steel frame underneath is strengthened to cope with its targeted and highly publicized duty cycle: going fast where you're free to pick your own lane, line, and speed. The Raptor also receives specific aluminum bodywork forward of the A-pillar. It's intended to look more combative and to help realize weight savings over steel sheetmetal. At 5,661 pounds fully dressed, this is the lightest Raptor we've weighed, by a substantial 319 pounds.

The second-gen 3.5-liter EcoBoost V-6, specially fortified for the Raptor's life purpose and christened the "high-output" one, joins a quick-shifting

TOR

10-speed automatic. Oil jets squirting at the pistons' undersides permit a higher peak turbo boost pressure (from 16 to 18 psi), and a concerted effort on keeping the powertrain cool (we're told it chills out significantly better than the previous Raptor's 6.2-liter naturally aspirated V-8) pushes the output envelope further.

The F-150's cooking-grade 3.5-liter EcoBoost V-6 puts down 375 hp and 470 lb-ft of torque, and the departed 6.2-liter V-8 pushed out 411 hp and 434 lb-ft. But at 450 hp and 510 lb-ft, the Raptor boasts a healthy margin over both. It's a big contrast from when the original SVT Raptor came to market in 2009; buyers received a 310-hp Triton 5.4-liter V-8 with three valves per cylinder. That experiment with an aging engine lasted only a year.

DOUBLE DUTY The V-6 uses both port and direct fuel injection. Max towing capacity ranges from 6,000 (SuperCab) to 8,000 pounds (SuperCrew).

The new Raptor certainly causes a commotion. With a distinctive, deep bellow (credit the unique dual exhaust setup), the truck sounds fast—and it is. With the new combination all-/four-wheel-drive system dialed to 4A (automatic 4x4), the Terrain Management System set to Sport (the other modes are Normal, Weather, Mud/Sand, Baja, and Rock/Crawl), the stability control turned off, and the transmission left in drive, the Raptor efficiently put its power down without a lick of wheelspin on its way to 60 mph in a thundering 5.2 seconds. As you pin your right foot to the firewall, you feel the engagement of each gear shift on the way to clipping the quarter mile in

13.9 seconds at 97.3 mph. By breaking into the 13s, this truck stands head and shoulders above any bygone SVT Raptor—the fleetest of which nailed 60 in 6.5 seconds and completed the quarter mile in 15.1 seconds at 91.3 mph.

It's a lot of power for a lot of truck, but the Raptor manages itself well. In the Ocotillo Wells area in the Southern California desert, Ford drew out a 50-odd-mile course through narrow trails, deep ruts, sandy tracks, and wide-open washes. To settle the truck in this environment—and to calm the rear in particular—the tire pressures were dropped from the on-road recommended 38 psi all around to 28 up front and 23 in the rear. The route served to highlight the suspension's control and the grip of the 315/70R17 BFGoodrich All-Terrain T/A KO2 tires. It also highlighted the Raptor's thirstiness. The 26-gallon fuel tank's gauge needle dropped from three-quarters full to just above one-quarter after one pass. The EPA numbers have jumped to 15/18/16 mpg city/highway/combined from the 2014 SVT Raptor's 12/16/13, but the new truck will go down to single digits if you're on the gas enough.

GREAT VIEWS Pressing the switch above the center screen produces a 360-degree overhead display and multi-angle views of the front end.

The upshot is you can chase your buddy's Trophy Truck during the Baja 1000 faster than before. The Raptor can top out at a bit over 100 mph if the terrain is packed solid enough and sending the right signals, but in the always-uncertain off-road environs, you spend most of your time assessing the truck's feedback. Different earth surfaces elicit an array of driver responses. One moment you're burying the accelerator to preserve momentum in soft sand. The next you're hunting for the zone where the truck flies nice and level, where one more mile per hour merely leads to greater fidgeting with the steering wheel.

The most violent high-frequency washboards feel like they'll shake your molars loose, but the coil springs in the front corners and leaf springs in back, paired with Fox's nine-stage bypass shock absorbers and BFG rubber, keep the suspension feeling limber. The nine stages refer to internal damping regions that respond according to how brutal the tires are being hit—five within the

The new Ford Raptor certainly causes a commotion. With its distinctive, deep bellow the truck sounds fast—and it is.

MEMORY LANE
For a high-speed off-road blast from the past, change the YouTube channel to *Head 2 Head* episode 14, "Ford Raptor vs Ram Runner!" with former editor Mike Febbo and off-road racer Joe Bacal.

compression zone and four for rebound. Bonus: It's much more comfortable on-road than the other 2017 F-150 we've tested to date (a Platinum 4x4).

Four years ago, we praised the last SVT Raptor we tested for its steering precision. A trait that's often the first to vanish when the words "truck," "lift," and "big tires" appear in the same sentence, the Raptor's front-end accuracy was apparent from the moment the steering wheel was turned. The excellent initial response on road imbues a sense of playfulness in the 86.3-inch-wide monster, but road holding is ultimately stunted by the KO2s, which only generate 0.71 g lateral grip (matching the old Raptor). But it's hard to fault the lack of stickiness in tires that are also tasked with slinging hectares of mud and snow. At least our figure-eight time improved, lowering the Raptor's all-time best lap from 29.3 to 28.2 seconds.

Yes, the truck can still be launched into the air with wheels in full droop, and it'll land without drama and continue about its business. We've been waiting four years to experience this again in a Raptor. As the truck moves along the landscape, it flings you vertically, and you feel a heroic sensation. It makes you want to take the long road to wherever you go. ■

2017 Ford F-150 Raptor	
BASE PRICE	$49,520
PRICE AS TESTED	$62,335
VEHICLE LAYOUT	Front-engine, 4WD, 5-pass, 2+2-door truck
ENGINE	3.5L/450-hp/510-lb-ft twin-turbo DOHC 24-valve V-6
TRANSMISSION	10-speed automatic
CURB WEIGHT (F/R DIST)	5,661 lb (55/45%)
WHEELBASE	134.2 in
LENGTH X WIDTH X HEIGHT	220.0 x 86.3 x 78.5 in
0-60 MPH	5.2 sec
QUARTER MILE	13.9 sec @ 97.3 mph
BRAKING, 60-0 MPH	140 ft
LATERAL ACCELERATION	0.71 g (avg)
MT FIGURE EIGHT	28.2 sec @ 0.60 g (avg)
EPA CITY/HWY/COMB FUEL ECON	15/18/16 mpg
ENERGY CONS, CITY/HWY	225/187 kW-hrs/100 miles
CO2 EMISSIONS, COMB	1.20 lb/mile

2017 CHEVROLET COLORADO ZR2

Today's extreme off-roaders tend to fall into one of two categories: rock-crawlers with spectacular axle articulation and huge ground clearance (Jeep Wrangler) or desert racers with extra-long suspension travel and soft suspensions capable of flying over jumps and absorbing bumps at speeds that would destroy a normal truck's (or a rock crawler's) suspension (Ford Raptor). Chevy decided to build a tweener by leveraging a key technology—Multimatic shocks.

These magic shocks in another guise helped make the Camaro Z/28 *Motor Trend*'s Best Driver's Car in 2014. To get techy for a second, Multimatic shocks press their oil not into deflecting discs but against precision-machined spring-loaded pistons, or "spools." That spool moves inside a thin sleeve into which little ports are precisely laser cut. This regulates oil flow rates as the piston moves.

The 2014 Camaro Z/28 was the first volume production fitment of DSSV shocks—keeping its tires mashed to a paved track under demanding conditions yet affording a surprisingly plush ride for a track weapon. The Colorado ZR2's duty cycle could not be more different from the Camaro, but DSSV shocks can deliver any force/displacement curve for any duty cycle. And they work in this application, as well.

Expect to pay somewhere in the $40,000 range when the ZR2 hits the market in spring 2017. Go to MotorTrend.com, and search for "ZR2 First Ride" for more technical details on Multimatic and the ZR2.

Frank Markus

SPECS **Base Price** $45,000 (est) **Vehicle Layout** Front-engine, 4WD, 4- or 5-pass, 2+2- or 4-door truck **Engines** 2.8L/181-hp/369-lb-ft turbodiesel DOHC 16-valve I-4; 3.6L/308-hp/275-lb-ft DOHC 24-valve V-6 **Transmission** 6- or 8-speed automatic **Curb Weight** 4,700-5,050 lb (mfr) **Wheelbase** 128.5 in **L x W x H** 212.7 x 76.7 x 72.2 in **0-60 MPH** 7.2-9.0 sec (*MT* est) **EPA City/Hwy/Comb Fuel Econ** Not yet tested **On sale in U.S.** May 2017

True love isn't fairy tale love, full of fervent fantasy and seen through rose-colored glasses. True love is complicated.

I wanted to love the 2017 Alfa Romeo Giulia in the way of iambic pentameter sonnets. Instead, I love it in a mature, honest, and clear-eyed way. I see its faults and choose not to let them affect my desire.

Rather than a family sedan upfitted for racing, the Giulia is the family sedan that race car engineers and drivers would build for themselves. And the Quadrifoglio Verde edition is the most passionate of the lineup.

The biggest concession is Alfa's decision not to offer the manual transmission in the U.S. Alfa boss Reid Bigland says internal projections showed a 1 percent take rate for manual transmissions, which would make it a big money loser. But I'm skeptical; last year BMW was reporting a 25 percent take rate on stick-shift M3s.

Instead, we get a ZF eight-speed automatic tuned for serious track duty. It's not a bad compromise. The first five ratios are short and tightly spaced, keeping the engine in the heart of its powerband. The shifts are said to occur in less than 100 milliseconds, and they're smooth except under full throttle. Downshifts are equally fast and rev-matched, and response to the paddle shifters is nearly instantaneous. Manual mode won't upshift for you, but should you choose to let the gearbox do the shifting, you won't be disappointed by its decisions, but it's still less fun.

THE ALFA ROMEO GIULIA PROVES TRUE LOVE IS COMPLICATED

That Quadrifoglio engine is a potent 2.9-liter twin-turbo V-6. It overachieves with 505 hp and 443 lb-ft of torque. Small displacement and big power mean big turbos, and big turbos generally mean lag. The Giulia has no anti-lag system per se, but its transmission keeps the power delivery focused. Pay attention when manually shifting. Nobody's home under 4,000 rpm, and then suddenly you're banging against redline. If you want the full fury of this engine, you have to drive it above 4,000 rpm all the time. Keep it on the boil to see 60 mph from a dead stop in just 3.9 seconds and the quarter-mile mark in 12.1 seconds while traveling at 119.8 mph.

O TRESPASS SWEETLY URGED!

Words Scott Evans
Photography William Walker

MISMATCHED The infotainment screen is slick, but the one between the gauges is hard to read.

Thank those short gear ratios for everyday drivability. The Giulia Quadrifoglio is nice to drive normally. If you want this car to drive like it was designed to, it's best to leave it in Dynamic mode. You will still get a fair amount of drivetrain lash in Dynamic (and Race), which feels like a high-powered manual in that regard. When you're sitting in traffic, Natural mode softens everything. There's also a fuel economy mode (A on the DNA selector), which we ignored. The Giulia will stay in whatever mode you left it in when you turned it off—unless you're in Race.

Race mode is a gem. The throttle pedal remains progressive rather than turning into a 500-hp light switch. Stability control switches to save-your-ass mode, which lets the rear end hang out just enough to make you catch it. When provoked, it prevents the tail from sliding out any farther but doesn't bring it back in line. When the rear does let go, it's predictable and easy to control. Full stability control keeps the rear end firmly disciplined but only modulates power enough to prevent wheel spin.

Not that grip is in short supply. The Quadrifoglio Verde has more grip than is generally useable on a street and impressively high limits on a track. Oversteer is easy enough to provoke with the throttle if you're ham-fisted. It's not constantly trying to swap ends, but rather the Quadrifoglio Verde is just a little loose. It allows you to rotate the rear end on corner entry with a trail brake and to steer with the throttle on the way out. Understeer is harder to provoke. On a track, this mild looseness makes the car exciting and engaging without making it scary and unpredictable. In our testing, it means 0.98 average lateral g on the skidpad and a 24.2-second figure-eight lap at 0.84 average g.

Primary control comes from the quickest steering I've felt in a sedan. The 11.8:1 ratio makes it responsive and precise. The tightest hairpin I could find only required 180 degrees of steering, so you never have to take your hands off the wheel. The trade-off is that if you don't give it your full attention on the freeway, you'll be in the next lane before you know it. The steering wheel also displays a shocking lack of feedback.

The optional Brembo carbon-ceramic brakes are powerful and stand up to track abuse but feel artificial. The pedal stroke is short, and the standard brake-by-wire system doesn't provide feedback. You can't feel when you're on the edge of ABS intervention or if the pads are getting hot. Instead, you've got to take other cues from the car. That's disconcerting when you're hurtling into a corner.

Alfa has struck a fantastic balance between the necessary stiffness for handling performance and everyday ride quality. The ride is stiff, but it's never harsh. Body movements are controlled, and the car corners flat. Every sport sedan should ride and handle this well.

The ride quality pairs well with the

Alfa Romeo Stelvio VS. Maserati Levante

Both the Alfa Romeo Stelvio and Maserati Levante offer exhilarating performance and jaw-dropping beauty. So how do you choose? Here are four ways the Italian-built luxury crossovers differ.

Exterior Design Dynamic creases run across the Stelvio's taut body and make it appear more windswept. The Maserati features plenty of chrome accents, and its long nose and bulbous rear give it a rounded, elongated shape.

Interior Luxury The Levante has leather seats or optional leather and silk seats, but some plastic bits creep in from the FCA parts bin. On the Stelvio Quadrifoglio, Alcantara and leather cover heavily bolstered seats, and a widescreen infotainment system sits inside the dash.

Performance The Stelvio offers two engines, and the Levante is sandwiched between them. Alfa's crossover delivers 280 hp from a 2.0-liter I-4 or 505 hp from a 2.9-liter V-6. Levante packs a 3.0-liter V-6 with either 345 or 424 hp.

Off the Beaten Path Switch the Levante to Off-Road mode, and the engine, transmission, and suspension adjust to harsher surfaces. The Stelvio has no such off-road feature, but the Quadrifoglio model does have a Race mode. **Kelly Pleskot**

2018 Alfa Romeo Stelvio Quadrifoglio	SPECS	2017 Maserati Levante SQ4
$73,595	BASE PRICE	$84,250
Front-engine, AWD, 5-pass, 4-door SUV	VEHICLE LAYOUT	Front-engine, AWD, 5-pass, 4-door SUV
2.9L/505-hp/443-lb-ft twin-turbo DOHC 24-valve V-6	ENGINE	3.0L/424-hp/428-lb-ft twin-turbo DOHC 24-valve V-6
8-speed automatic	TRANSMISSION	8-speed automatic
4,050 lb (est)	CURB WEIGHT	4,979 lb (51/49%)
112.5 in (est)	WHEELBASE	118.3 in
184.3 x 85.0 x 65.0 in	L X W X H	197.0 x 77.5 x 64.3-67.7 in
3.9 sec (mfr est)	0-60 MPH	4.9 sec
Not yet rated	EPA CITY/HWY/COMB FUEL ECON	14/19/16 mpg
Not yet rated	ENERGY CONSUMPTION, CITY/HWY	241/177 kW-hrs/100 miles
Not yet rated	CO2 EMISSIONS, COMB	1.22 lb/mile
Second quarter 2017	ON SALE IN U.S.	Currently

EVEN LIGHTER Quadrifoglio Verdes get a carbon-fiber hood, roof, and seats.

quiet cabin. The cabin begins to pick up wind noise at 90 mph. Lay into the throttle, and open the automatic dual-mode exhaust to be treated to an exhaust note best likened to a 2.9-liter chainsaw with a blow-off valve.

The carbon-fiber seats are comfortable. The bolstering restrains you on the track but is relaxing while cruising on the street. The rear seats are a compromise, as they require climbing over a big wheel-well hump to get in and out. You'll enjoy plenty of shoulder and knee room once you're in the car, but the headroom does become a bit pinched if you order the double sunroof. A big driveshaft tunnel means the middle seat is mostly useless.

The stylishly appointed interior is a treat. Leather is standard on all Giulias, and it's the rich, soft stuff. It's also on the dash and doors and features accent stitching. The dashboard design is interesting and features a frameless infotainment screen. The software itself is a bit layered, and the rotary controller feels as if it's about to pop right off in your hands.

The standard Giulia is equipped with a stout 2.0-liter turbo-four making 276 hp and 295 lb-ft. It delivers a mostly linear response after a bit of low-end lag. Alfa says it'll do 5.1 seconds to 60, and I believe it. Like the V-6, it's at its best at high rpm.

The best news about the standard and Ti Giulias is they still handle like the Quadrifoglio, to a point. It's the same great chassis held back by all-season tires that scream bloody murder if you're even moderately aggressive in a corner. It's best to spec the Sport package if you want to have any fun. Either way, the fixed dampers ride about the same as the Quadrifoglio's when set to Natural mode. The steel brakes are still strong, but they suffer the same lack of feel.

The standard seats are less aggressive and more comfort-oriented but are still bolstered nicely. You'll get quality leather at every price point—there's no stripper model in the traditional sense.

No love is perfect. The Giulia has its warts, but this sedan, especially the Quadrifoglio Verde edition, is of such passionate stuff that we're mostly willing to forgive its failings. If the midcycle refresh shows up with a manual transmission, an anti-lag system, some steering feel, and some feedback in the brake pedal, we'd wonder if we'd picked a lucky four-leaf clover. Until that distant date, Giulia, under love's heavy burden do I sink. ■

POWERTRAIN/CHASSIS	2017 Alfa Romeo Giulia (Quadrifoglio Verde)
DRIVETRAIN LAYOUT	Front-engine, RWD
ENGINE TYPE	Twin-turbo 90-deg V-6 alum block/heads
VALVETRAIN	DOHC, 4 valves/cyl
DISPLACEMENT	176.4 cu in/2,891cc
COMPRESSION RATIO	9.3:1
POWER (SAE NET)	505 hp @ 6,500 rpm
TORQUE (SAE NET)	443 lb-ft @ 2,500 rpm
REDLINE	6,500 rpm
WEIGHT TO POWER	7.4 lb/hp
TRANSMISSION	8-speed automatic
AXLE/FINAL-DRIVE RATIO	3.09:1/1.98:1
SUSPENSION, FRONT; REAR	Control arms, coil springs, adj shocks, anti-roll bar; multilink, coil springs, adj shocks, anti-roll bar
STEERING RATIO	11.8:1
TURNS LOCK-TO-LOCK	2.3
BRAKES, F; R	15.4-in vented, drilled, carbon-ceramic disc; 14.2-in vented, drilled, carbon-ceramic disc, ABS
WHEELS, F; R	8.5 x 19-in; 10.0 x 19-in forged aluminum
TIRES, F; R	245/35R19 93Y; 285/30R19 98Y Pirelli P Zero Corsa AR Asimmetrico
DIMENSIONS	
WHEELBASE	111.0 in
TRACK, F/R	61.2/63.3 in
LENGTH X WIDTH X HEIGHT	182.6 x 73.7 x 56.1 in
TURNING CIRCLE	37.5 ft
CURB WEIGHT	3,749 lb
WEIGHT DIST, F/R	53/47%
SEATING CAPACITY	5
HEADROOM, F/R	38.6/37.6 in
LEGROOM, F/R	42.4/35.1 in
SHOULDER ROOM, F/R	56.1/53.6 in
CARGO VOLUME	13.4 cu ft (est)
TEST DATA	
ACCELERATION TO MPH	
0-30	1.6 sec
0-40	2.3
0-50	3.1
0-60	3.9
0-70	4.8
0-80	5.9
0-90	7.1
0-100	8.5
0-100-0	12.3
PASSING, 45-65 MPH	1.6
QUARTER MILE	12.1 sec @ 119.8 mph
BRAKING, 60-0 MPH	100 ft
LATERAL ACCELERATION	0.98 g (avg)
MT FIGURE EIGHT	24.2 sec @ 0.84 g (avg)
2.68-MI ROAD COURSE LAP	120.22 sec
TOP-GEAR REVS @ 60 MPH	1,600 rpm
CONSUMER INFO	
BASE PRICE	$73,595
PRICE AS TESTED	$85,445
STABILITY/TRACTION CONTROL	Yes/Yes
AIRBAGS	Dual front, front side, f/r curtain, front knee
BASIC WARRANTY	4 yrs/50,000 miles
POWERTRAIN WARRANTY	4 yrs/50,000 miles
ROADSIDE ASSISTANCE	4 yrs/Unlimited miles
FUEL CAPACITY	15.3 gal
EPA CITY/HWY/COMB ECON	17/24/20 mpg
ENERGY CONS, CITY/HWY	198/140 kW-hrs/100 miles
CO2 EMISSIONS, COMB	0.99 lb/mile
RECOMMENDED FUEL	Unleaded premium

The smell is exquisite and a bit romantic. The olfactory nerves are powerful memory makers, and they are firing hard after climbing into the driver's seat. The throne is springy (is that an actual spring jabbing our backside?) and doesn't seem especially durable even though our bottom sinks relaxingly. We extend an arm to shut the lightweight, delicate-feeling door. It appears to be only partly latched. We try again, but there's a similar outcome. A representative of the BMW Classic Center in Munich gives the door a hearty thrust from the outside, and the 1975 528 seals with a solid yet decade-appropriate click. A door has closed in more ways than one.

Earlier in the day we made first contact with the 528's descendant, six generations removed. The seventh-gen 2017 BMW 5 Series sedan now flies on G30 platform architecture, and our first taste allowed us to reunite with a distinguished set of numerals and one letter: 540i.

Absent from the preceding model F10's reign and perhaps best affiliated with the E39 of the late 1990s and early 2000s, the "540i" sequence summons the type of warm, cozy tingling that European vacationers seek when they travel to Portugal in the winter months.

Pervasive E39 nostalgia lends both optimism and apprehension. Maybe the G30 has reversed the course the F10 (and to a lesser extent, the fifth-gen E60) plotted. Perhaps the newest 5 Series would have the mystical equilibrium of luxury and sport that a driver can feel was baked in from the very beginning

of development rather than the piece-meal sport infusions added into a sedan that truly wants to emphasize luxury. Maybe BMW would rediscover a crucial emotional element to supplement the 5 Series' technical excellence.

In a comparison test against the Audi A6 3.0T, Infiniti M37S, and Lexus GS 350 F Sport, the previous-generation F10 535i M Sport landed in second place behind the Lexus.

"Alas," we wrote, "the 535i is a car you respect, not one you fall in love with." Associate editor Scott Evans found that Bimmer to be "competent, but in a somewhat cold, calculating fashion. I know I can drive it fast, but I don't walk away dreaming of driving it again."

The driving impressions will come in a bit. But BMW is pushing technology hard, so we'll focus on that first. Tech worshipers have lots to dream about with the G30. As with the current 7 Series, the redesigned 2017 5 Series eagerly doubles down on the latest semi-automated

The BMW 5 Series sedan now flies on G30 platform architecture.

A NEW HOPE

BMW BEGINS A NEW CHAPTER IN THE 5 SERIES SAGA

Words Benson Kong

LAUNCH PAL
We only tried the straight-six this time. At launch, the 530i will feature the new B46 2.0-liter inline-four.

driver aids. The radar-guided adaptive cruise control with stop-and-go functionality (a must for gridlock sufferers) is operable up to 130 mph and has the range to scan two vehicles ahead instead of fixating on the hunk of metal directly in front. As in version 8.0 of Tesla Motors' perpetual-headline-grabbing Autopilot, this longer gaze down the roadway is designed to improve the car's longitudinal reaction time, which is useful if an inattentive driver is unable to check up when coming upon a multivehicle pileup. The BMW smart cruise control should be able to scan the situation and optimize the outcome rather than continue the metal-on-metal mayhem.

Coupled to the cruise control are sideways assists (sadly, none of which include a drift mode). The top-flight Driver Assistance Plus II package (ZDT in BMW code) includes active lane change and active lane keeping assistants with side collision avoidance. Both intend to reduce driver workload by using environment-surveying sensor data to develop electronic situational awareness that can augment the driver's mental processing. The challenge is to make these systems feel natural even though that desire inevitably butts heads with safety factors and risk-averse legal departments.

Active lane change requires the driver to hold the turn signal stalk in the direction he or she intends to cut. After ensuring the forward-looking camera is actually reading the lane markers properly, it'll then make sure there's plenty of gap between you and another vehicle before committing. For the sake of science, we checked to make sure active lane change wouldn't attempt to merge into an obvious obstacle. (It didn't.)

The active lane keeping assistant does a commendable job keeping the car between the lines on straight roads without excessively swaying from one edge to another. But the semisentient steering is not granted sufficient authority to position the car within the markers on mild sweepers at freeway speeds. Unlike Tesla's Autosteer, it won't fight you at the steering wheel if you want to retake control. These systems provide an occasional fun distraction, but they're not tools that embed into the fabric of our driving experience. Not yet, at least.

These driver assists allow the 540i to flex its tech muscle. But BMW made its mark in the industry with sporty driver's cars. Its drift away from this

BREAKING THE MOLD BMW has turned the corner on its interiors. The touch and feel of the materials and controls have moved upmarket, blowing past the long-held position of "spartan yet livable."

The total package impresses. The G30 continues its predecessor's focus on the luxury experience.

THE CARS The new BMW 5 Series must beat

The Mercedes-Benz E-Class might be the progenitor of the modern midsize luxury sedan, but it was BMW that injected excitement into the segment with the launch of the E34 range in the late 1980s. Regardless of whether you could only afford the entry-level model or indulged in the glorious M5, the 5 Series quickly became the machine with an unbeatable combination of driver appeal and technology.

Fast-forward almost 30 years, and the game has changed. The current E-Class reveals how Mercedes-Benz has splurged on technology and sharpened its approach to chassis tuning. And with its new XF sedan, Jaguar is realizing the potential of a brand steeped in style and performance. These two cars pose the biggest threat to the seventh-gen BMW 5 Series range when it arrives at U.S. dealerships.

The current Audi A6 is at the end of its model life. An all-new A6, built on VW Group's MLB architecture, is due late 2017. The good news is it reportedly won't get the same staid styling as the new A4 but will instead lean heavily on design cues previewed by the stunning Prologue concept unveiled at the 2014 L.A. show. But can the FWD-biased MLB architecture deliver the dynamic flair the rear-drive 5 Series appears to have delivered on our initial test drive?

The Lexus GS is competent but doesn't shine. Every time you park it, you have to look at it. The Cadillac CTS is fundamentally a sound car but still needs finessing around the margins. The new 5 Series won't be troubled by these two.

In terms of overall size, the new 5 Series neatly splits the difference between the Mercedes-Benz and the Jaguar. It's 0.7 inch shorter than the Jaguar and 0.5 inch longer than the E-Class. Crucially, the BMW's wheelbase is longer: 117.1 inches versus 116.5 inches for the XF and 115.7 inches for the E-Class. In theory, the new 5 Series should offer the roomiest interior, especially in the rear seat. Then there's the tale of the tape. Where things get interesting is how deftly BMW splits the difference between the E-Class and the XF in terms of driver aids and driver appeal. Mercedes' midsize sedan is a technological tour de force boasting effortless, near-autonomous driving capability. The more elegantly styled and proportioned XF has superb steering, lovely chassis balance, impressive grip, and a measured ride. It's the dynamic benchmark in the segment.

THREATS? The CT6 won't be much of a challenge.

The new BMW 5 Series comes standard with a stereo camera that will work with optional radar and ultrasound sensors to facilitate a level of autonomous driving capability that should match that of the E300. Its infotainment system includes a high-resolution 10.25-inch screen and can be operated via the iDrive controller, voice command, or gesture control.

A more extensive drive opportunity will determine whether the new 5 Series is able to match the XF in terms of sheer driver appeal. On BMW's recent form, we're not so sure. In so resolutely taking aim at Mercedes—making its cars a little softer, more comfortable, more conservative—BMW might have handed an insurgent Jaguar an opportunity to do what the E34 did to the midsize luxury car establishment years ago. Only this time, BMW is part of the establishment.

Angus MacKenzie

Midsize sedan	hp/lb-ft	trans	0-60 (secs)
BMW 5 Series 2.0	248/258	8 sp	6.2
M-B E-Class 2.0	241/273	9 sp	6.5
BMW 5 Series 3.0	335/332	8 sp	5.0
Jaguar XF 3.0	340/332	8 sp	4.9

core principle means the 5 Series finds itself in an existential challenge with the Mercedes-Benz E-Class and Jaguar XF. Has the new model reversed course?

The popular ZMP M Sport package adds the requisite stalking bodywork, stiffer M Sport suspension, and 19-inch wheels fitted with staggered-width Michelin Primacy 3 tires (245/40 front, 275/35 rear). This hardware is affixed to a chassis that was put on a juice cleanse and saw greater deployment of three of the big four mass-reducing staples: high-strength steel, aluminum, and magnesium. Notice that in spite of its carbon fiber manufacturing plant in Moses Lake, Washington, BMW did not lavish that material on the G30. For now, carbon fiber remains reserved for M car roofs, the 7 Series flagship sedan, and projects that start with the letter i.

BMW claims up to 137 pounds in weight saved, which is in line with the manufacturer-estimated curb weight versus the last F10 535i M Sport we weighed at 4,007 pounds. For maximum driver enjoyment, the 540i can come with BMW's performance enhancers: adjustable shock absorbers, variable-ratio steering, rear-wheel steer, and self-adapting active anti-roll bars. The anti-roll bars' lateral leverage is now managed by electric motors instead of hydraulic circuitry, which is similar to a certain SUV from the U.K.'s Cheshire region that might also speak German in its off time. The system's goal is the same: achieving roll-stiffness targets when cornering but having the mechanical ability to negate itself when driving comfort is vital.

The total package impresses. The G30 continues its predecessor's focus on the luxury experience by gulping down long stretches of highway miles with quiet ease. The handling has taken a step in a familiar, positive direction. Previously, the front end would give up before drivers had their fill. And short of giving the gas pedal the full boot and then going for a possibly wild—and certainly unpredictable—ride, there was little to do about it.

The new 2017 5 Series' front-to-rear balance seems much better, with a rear end that's been freed up to chase the front wheels more readily. The rear end can skip over rougher patches of pavement, but credit the chassis tuning for telegraphing that information without overwhelming the driver and still giving adequate opportunity to compensate. It doesn't take much steering input to begin bending the 540i into a corner. (For clarity's sake, these impressions came from a brief test carried out over a couple days.)

To carry the momentum, a 335-hp, 332-lb-ft 3.0-liter turbocharged I-6 gifts 35 hp and 32 lb-ft of torque more than before and is a willing accomplice to the right foot. (For you engine-series geeks, it's called B58.) As expected, the eight-speed automatic rips through the gears and artfully flatters the I-6's powerband. Simply put, the powertrain shines. The brakes are a touch grabby if your braking foot is noncommittal to fast deceleration but are otherwise strong and stout. We hope this behavior translates perfectly come time for our instrumented limit-handling testing. Such full-on tire-squealing evaluations often unpeel hidden layers of a vehicle's character.

Bestowed with interior perfumes, the substantially more fanciful G30 cabin features the highly functional iDrive 6.0, gesture control, and a generous overhaul with quality cabin materials.

The 1975 generation-E12 528 has all the old-car charm (the tach and speedometer needles shake as they sweep) with suitable (lack of) refinement. By contrast, the 2017 5 Series' door shuts as effortlessly and luxuriously as 40 years of progress should accomplish. More important, the new-edition door closes a chapter of the 5 Series' life—where sport took a back seat to luxury. If it tries really hard, this generation's 540i can write its own history. ■

2017 BMW 540i M Sport

BASE PRICE	$62,000 (est)
VEHICLE LAYOUT	Front-engine, RWD, 5-pass, 4-door sedan
ENGINE	3.0L/335-hp/332-lb-ft turbocharged DOHC 24-valve I-6
TRANSMISSION	8-speed automatic
CURB WEIGHT	3,850 lb (mfr)
WHEELBASE	117.1 in
L X W X H	194.6 x 73.5 x 57.8 in
0-60 MPH	4.9 sec (mfr est)
EPA CITY/HWY/ COMB FUEL ECON	20/31/24 mpg (est)
ENERGY CONS, CITY/HWY	169/109 kW-hrs/100 miles (est)
CO2 EMISSIONS, COMB	0.82 lb/mile (est)
ON SALE IN U.S.	Currently

RULES Hand gestures haven't been standardized. This should be "do as I please, HAL."

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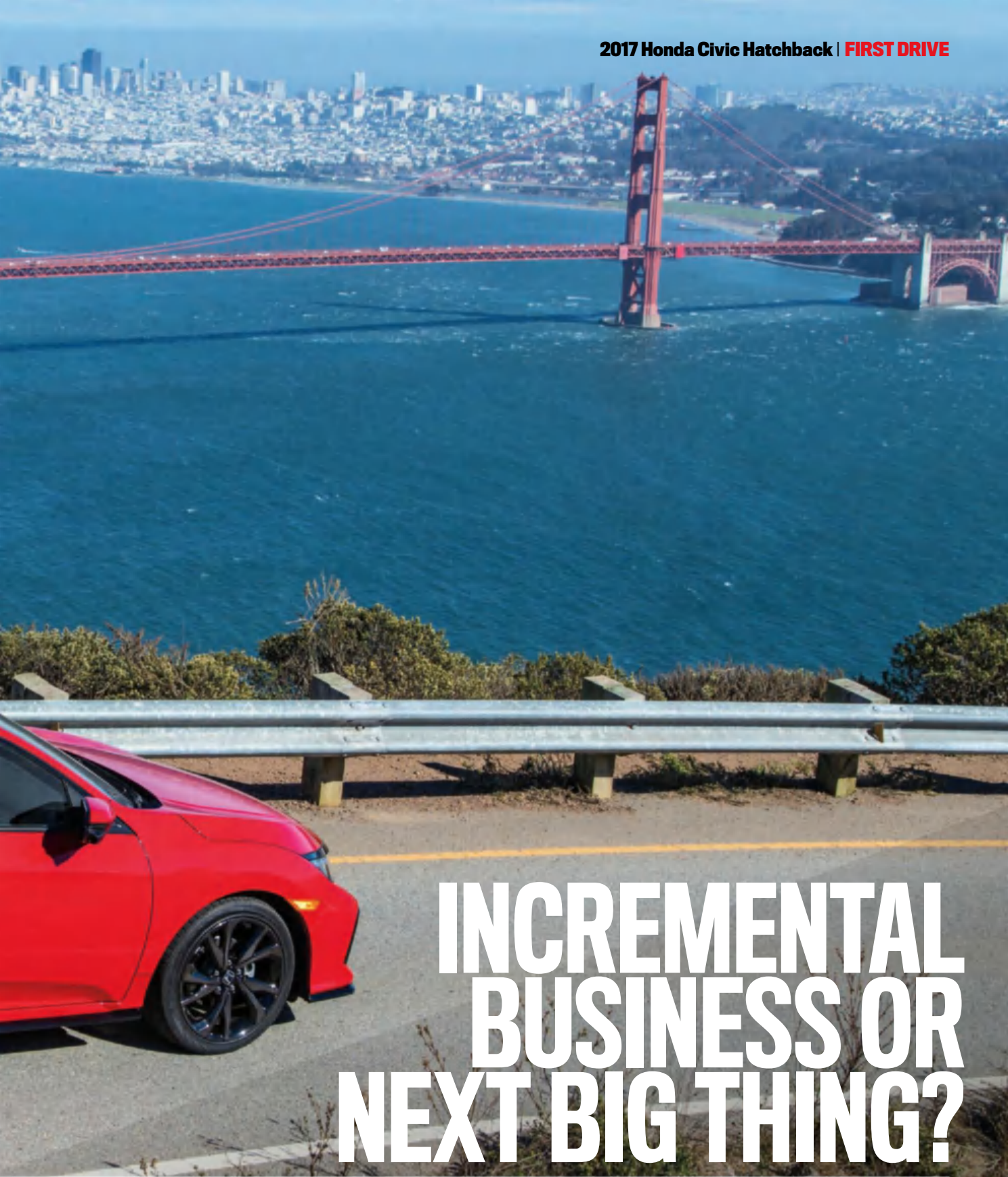
Words Chris Walton

The 2017 Honda Civic hatchback is a sporty riff on the sedan, and given the car-buying habits of Americans, Honda is not expecting its hatch to be a runaway hit. But this new edition is so good that we think Honda might be underestimating its chances.

Honda routinely sells more than 300,000 Civic sedans without breathing hard, and it expects the hatchback to add 50,000 incremental units. It seems like a lot of hassle for a little bonus volume, especially when this global model is imported from Swindon, England—but only after an American-made engine is first shipped across the Atlantic. Maybe Honda just wants to cover its bases.

The Civic's roof, front and rear fascias, and rear glass are unique to the hatchback, so it might help to think of it as a uniquely styled Civic liftback rather than a proper hatchback. Although the slant-back glass doesn't have the upright, boxy



INCREMENTAL BUSINESS OR NEXT BIG THING?

silhouette of a traditional hatchback, it does provide an enormous aperture (37.8 by 44.1 inches) when the rear glass is raised. That makes loading bulky items easier. Honda also introduced a right- or left-mounted retractable, detachable cargo cover to eliminate the obstructing full-width bar of a traditional cover.

Built on the same platform as the Civic sedan, the four-door, five-passenger 2017 Honda Civic hatchback will, according to Honda, have more cargo space (25.7 cubic feet with rear seats up and 46.2 cubic feet folded) than the Ford Focus, the Mazda3, and the Volkswagen Golf, its compact hatchback competition. (VW claims

MORE LIKE A "LIFTBACK" WITH SHARPER STYLING AND STEERING

You can't argue with the Civic hatchback's smart packaging. It's more than the added cargo capability and access it provides.

the Golf has more room with rear seats folded.) Compared to the Civic sedan's 15.1-cubic-foot trunk, those measurements seem remarkable, but remember sedans and hatchbacks are measured differently (the fitment of calibrated luggage in sedans and multiplication of length, width, and height measurements in hatches and wagons).

Like the sedan and coupe, the Civic hatchback comes in LX, EX, and EX-L Navi trims. For $1,000, you can add the Honda Sensing safety suite (adaptive cruise control, automatic braking, lane keeping, etc.). New Sport and Sport Touring trims spring from low-end LX and high-end EX-L Navi, which get hatchback-exclusive red interior illumination, aluminum and carbon interior trim, and gloss-black exterior garnishes. A six-speed manual transmission is available on base LX or Sport trims; otherwise it's a CVT, which adds shift paddles in Sport Touring trim. All trim levels are powered by the same 1.5-liter direct-injected turbo-four, but output varies from 174 to 180 hp and 162 to 177 lb-ft of torque, depending on the transmission.

Inside, the Civic hatchback has essentially the same treatment, look, and feel as the Civic sedan. Its passenger measurements are within fractions of an inch of the sedan's, with the greatest difference being rear legroom, where the hatchback loses 1.6 inches to the sedan. The Sport trim gets shortchanged on features because it's based on a base model, but it benefits from a leather-wrapped shifter and steering wheel and the optional manual transmission and highest-output engine. The Sport is priced at $22,135 with the manual transmission and $22,935 with the CVT. The everything-on-the-menu Sport Touring is priced at $29,135 and includes exclusive items such as LED headlights.

All Civics have the same front-strut, rear-multilink setup, but hatchbacks get a thicker front anti-roll bar, different damping rates, and a steering tune that add more control and firmness than the sedan. The Sport/Sport Touring hatches get a bespoke 11.1:1 steering ratio compared to the Civic-wide 10.9:1 ratio. We drove the EX and Sport 6MT models. The Sport's direct steering, combined with its suspension tuning and 235/40R18 tires, gives the hatchback a much pointier, planted personality. The leather wheel is well-contoured, and despite its sportier, retuned electric-assist, the Civic hatch doesn't transmit the loaded cornering feel of the Mazda3's benchmark electric steering. Grip and agility are higher than in a Civic sedan, and the chassis feels sophisticated and fun without being as harsh as if Honda had gone whole-hog. They're leaving that for the no-compromise Civic Type R.

The clutch pedal is light and requires trial and error to find its bite point. We acclimated quickly and easily negotiated busy city traffic and twisting roads. The light-effort shifter with distinct gates makes it easily one of the best in the hatchback segment. Power from the 1.5-liter turbo is remarkably linear because the torque peak begins below 2,000 rpm and carries on up to 5,000 rpm on all trim levels. Redline is 6,500 rpm, and horsepower peaks at 5,500 rpm at about the same moment torque begins to drop off. This 1,000-rpm range gives a comfortable window to change gears without having to wring it out for

2017 Honda Civic Hatchback

BASE PRICE	$20,535-$29,135
VEHICLE LAYOUT	Front-engine, FWD, 5-pass, 4-door hatchback
ENGINES	1.5L/174-hp/162-167-lb-ft turbocharged DOHC 16-valve I-4; 1.5L/180-lb/162-177-lb-ft turbocharged DOHC 16-valve I-4
TRANSMISSIONS	6-speed manual, cont variable auto
CURB WEIGHT	2,850-3,000 lb (mfr)
WHEELBASE	106.3 in
L X W X H	177.9 x 70.8 x 56.5 in
0-60 MPH	6.8-7.4 sec (*MT* est)
EPA CITY/HWY/COMB FUEL ECON	30-31/36-40/32-34 mpg (est)
ENERGY CONSUMPTION, CITY/HWY	109-112/84-94 kW-hrs/100 miles (est)
CO2 EMISSIONS, COMB	0.56-0.60 lb/mile (est)
ON SALE IN U.S.	Currently

JUST WHAT IT NEEDED Not a fan of the Civic sedan's chrome chin? The hatchback changes that, among other things, to glossy black instead.

MORE PERFORMANCE
The Civic Type R will come in late 2017.

6 THINGS To know about the 2017 Civic Si and Type R

The prototype is a coupe, but ... Although the new Honda Civic Si concept was shown in coupe form, the sporty model will also be available as a sedan. That body style first arrived for the Si in 2007 during the second year of the eighth-gen Civic.

Why the Civic Si won't come in hatchback form The Honda Civic Si is offered in coupe and sedan only. Why? Simple. All hatchback models are built at the Swindon plant in the U.K., and coupe and sedan models are built in Ontario, Canada. It wouldn't be cost-effective to add this low-volume model to a second plant.

The signature color The concept's special Rallye Red Pearl paint won't make it to production. Rather, the automaker's traditional Rallye Red paint will continue to be the Si's signature color when it arrives in mid-2017.

Power from a 1.5-liter turbo-four Power figures haven't been revealed, but the new 1.5-liter turbocharged direct-injected dual-VTC I-4 will make more than the ninth-gen Civic Si's 205-hp, 174-lb-ft 2.4-liter i-VTEC I-4. A close-ratio six-speed manual will continue to be the sole transmission offering.

Go-fast parts Although the production Civic will feature a limited-slip differential, the concept's HFP (Honda Factory Performance) 19-inch alloy wheel and tire combo and drilled brake rotors won't be standard. They will, however, be offered through dealers.

Sporty Civic gets the center-mounted exhaust tips Center-mounted exhaust tips are exclusive to the 180-hp Civic hatchback Sport and Sport Touring (dual exhaust with round tips), the new Civic Si coupe and sedan (dual exhaust with polygonal tips), and the Civic Type R (triple exhaust with round tips). **Jason Udy**

all its worth. Being that the engine's broad torque characteristics are largely irrespective of engine rpm, gear ratios are spaced widely, and there aren't peaks and valleys in acceleration or pull. The Sport 6MT being close to the lightest, the most powerful, and the most launchable, we predict it will prove the quickest of the eight variants, probably good for a sub-7-second 0–60 time.

In the hatchback EX, we appreciated the better infotainment system, but we missed the carbon-look interior trim, red illumination in the instrument panel, and the leather steering wheel. The EX's rubberized/texturized steering wheel is literally tacky and sticky. (We've observed this in the sedan, too.) Its narrower 215/50R17 tires began singing around corners earlier than the Sport's, but the added sidewall provided a more compliant ride. As we've already praised Honda's CVT for its quick response in the sedan, especially in the S Drive mode, we were pleased that the same non-"rubber-banding" directness remained intact. Acceleration and the engine note are linear. Passing maneuvers lack drama.

There's no endless droning that hampers many CVTs. Both the Sport and EX were quiet. Wind and driveline noise are well-subdued, and although road roar is noticeable, it's hardly noisy for its class.

Whether you like the Civic hatchback's exterior styling is up to you. But you can't argue with its smart packaging. It's more than the added cargo capability and access it provides. The hatchback offers essentially the same passenger accommodations and features as the sedan, plus a more compelling driving experience without a ride compromise. We would choose the hatchback over the sedan any day. If the rest of the market agrees, the folks in Swindon better get ready to work some overtime. ■

Words Chris Clonts

SOLVING A PROBLEMATIC LINEUP

Subaru has been known to produce reliable, safe cars with the brand's signature all-wheel drive capabilities and high value propositions. There's a reason Subarus captured *Motor Trend*'s SUV of the Year trophy in 2009 and 2014 with the Forester and in 2010 with the Outback.

But the Impreza lineup has been problematic. Excluding the WRX, which Subaru treats as a separate program, there were always some things that wound up in the "reasons to consider another brand" column: dowdy driving dynamics, cut-rate interior feel, and subpar infotainment options. Having fabulous AWD tech and safety isn't enough.

The 2017 Subaru Impreza is the first model produced on the Subaru Global Architecture platform, which will be used for all future models. If other models, including the coming three-row Tribeca replacement, show this much improvement, then Subaru might become one of the more coveted car brands.

Making leaps forward in driving feel, handling, interior space, and infotainment capability, Subaru has learned that if an automaker wants to keep growing, it has to pay attention to the whole car.

The Impreza feels solid, and that's not because it's substantially heavier. Subaru says that despite the added steel for safety and structural rigidity (it's 70 percent more rigid than the 2016), it weighs within 100 pounds of the fourth-gen Impreza. It felt more comfortable over ramplike freeway expansion joints and broken pavement than *Motor Trend*'s long-term 2015 Outback, which sometimes overly softens such imperfections.

That added steel helps safety, too. Subaru says crash energy absorption is increased 40 percent versus the 2016 Impreza. The outgoing models were TSP+ picks when equipped with EyeSight.

The steering feel is a big improvement. The new 13:1 ratio

SUBARU'S NEW PLATFORM LEADS TO BIG LEAPS FORWARD FOR THE IMPREZA

(down from 16:1) combined with the Limited trim's 17-inch wheels and some small steering adjustments creates a more responsive feel than the last-gen Impreza. Together with the control-arm suspension it creates a car that responds quickly and tracks well. It gave us confidence on the mostly empty mountain roads east of San Diego and close to the border where Subaru took us to drive these Imprezas. Subaru says body roll is reduced by 50 percent.

Subaru's benchmarking indicated the previous Impreza's handling lagged badly behind the Audi A3, Ford Focus, Mazda3, and Honda Civic. By their estimation, it now surpasses the current models of those cars. We'll have to wait for direct comparisons, but we can say that handling and comfort has drastically improved.

Visibility is good, thanks to smaller pillars and side mirrors that are farther back on the door to allow better viewing out of the quarter-windows up front.

Some will say that the 2017 Subaru Impreza's 2.0i four-cylinder boxer engine, which now has direct injection and gets a 3 percent bump in horsepower to 152 and 145 lb-ft of torque, is underpowered. But this engine combined with this CVT seemed to handle most situations we threw at it. It would have struggled trying to overtake cars uphill, which is a situation that doesn't occur often. But in everyday driving, this car wouldn't be considered frustratingly slow like a Crosstrek or a Honda HR-V. Throttle tip-in, sometimes an issue with Subaru, was gracefully linear and easy to control.

In an everyday small car, the goal is to have a balance of power and efficiency. Decent numbers make up for whatever power could be considered as lacking. The sedan is rated at 28/38/32 mpg city/highway/combined with the CVT.

As soon as you sit in the $28,760 Limited, including $3,845 in options, you notice it's a step up from previous Imprezas. It has leather and soft-touch surfaces. It was easy to find a good seating position with the power seat, but we wish there were eight-way seats so we could adjust the thigh support/angle of the front of the seat separately.

The arrangement of the displays is logical and not overly fussy. Expected information such as speed and trip data resides in the display between the gauges. The color multifunction display shows the functioning of the EyeSight safety system, and the 8.0-inch touchscreen handles the infotainment controls and the Apple CarPlay setup.

It's hard to overstate what a big leap forward this system is for Subaru. It's intuitive, and Apple CarPlay and Android Auto make using the system simple. Those who might have looked at Subarus in the past but shied away because of outdated, limited-capability systems can no longer dismiss the Impreza for that reason.

The solid structure reduces interior road noise except on extremely coarse surfaces that few cars handle well. Wind noise was only an issue at high freeway speeds. Even the HVAC system has tempered its jetlike roar by 50 percent.

Rear-seat passengers will also notice

AMERICAN MADE For those keeping score on such things, this is the first Impreza built in the U.S. The plant in Lafayette, Indiana, has benefited from a $1.3 billion investment and will also build the coming three-row crossover.

It's thrilling to see Subaru finally addressing the Impreza in 360 degrees.

big improvements. Both the sedan and the hatchback are 1.6 inches longer and 1.5 inches wider. In the old sit-behind-myself test, I had close to 5 inches of extra knee room for my 5-11 frame. The interior feels as solid as the overall car rides. Even the glove box closes with a thunk and not a plasticky click.

Anyone putting cargo in an Impreza will notice what a huge difference the split taillights make. The hatchback's opening is wider by 5 inches; the sedan's trunklid opening is 4 inches wider. Both access a more versatile cargo space with or without the rear seats folded.

We also drove a Premium-trim hatchback listed at $24,910 with EyeSight, moonroof, and steering-responsive foglights. The hatchback gets a slightly lower fuel economy rating, coming in at 28/37/31 mpg city/highway/combined.

The color multi-information display has been replaced with a basic LCD unit. That said, the Premium hatch still offered a much-improved driving experience, with the exception of a noticeably lighter steering feel, which is perhaps owed in

part to the 16-inch wheels covered in 205/55R16 tires. Damping over joints and small imperfections was still good.

We would have loved to see the Premium interior have less obvious plastic. It's a marked improvement from the old car, but a silver plastic insert on the dash (versus the faux carbon fiber on the Limited) looks cheaper than we'd like.

With the new Impreza, Subaru has attempted to simplify the trim lines into base 2.0i, Premium, Sport, and Limited.

All Imprezas come standard with a 6.5-inch touchscreen infotainment system with Bluetooth, Android Auto, and Apple CarPlay connectivity—but it only has one USB connector hidden in the center storage cubby. (Pssst: We like it better when it faces the cockpit in the center stack storage area.) A tilting and telescoping steering wheel and 60/40 split fold-down rear seats are also standard.

The Premium model adds a seven-speed manual shift mode for the CVT, heated front seats, 16-inch alloy wheels, roof rails, Subaru's Starlink connected services, Stablex dampers, and welcome lighting.

Here, the two higher models split. The Impreza Sport is more performance-focused. It gets sport suspension tuning, brake-based active torque vectoring, active grille shutters, 18-inch wheels with 225/40R18 tires, push-button start, a leather-wrapped steering wheel, red stitching on the dash and other areas, simulated carbon-fiber inserts on the dash and doors, and a spoiler.

The Limited model adds leather seats, a six-way power driver's seat, LED low- and high-beam headlights, steering-guided headlights and high-beam assist, voice-activated controls, satellite radio, and silver stitching on the dash.

Subaru's lauded EyeSight system is optional on all trim levels and includes advanced safety and driver assistance features, including automatic high-beams, adaptive cruise control, precollision braking, lane departure warning, and blind-spot monitoring. It also includes reverse automatic braking.

It's thrilling to see Subaru finally addressing the Impreza in 360 degrees. And we can't wait for a chance to hand over the 2017 Subaru Impreza to our test crew—especially the Sport variant.

Automotive journalists are often asked, "What car should I buy?" For folks looking for small cars, many of us have answered, "Look at Honda or Mazda, depending on your needs." Now there's a reason to add, "But before you whip out your checkbook, be sure to drive an Impreza." ■

REAL REFRESHING Ninety-five percent of the parts are new. Todd Hill, manager of the Impreza car line, even got excited about the door handles, the car's first new ones in 17 years. The Subaru Global Platform's extra inch of wheelbase also ensures a generous amount of rear-seat room.

2017 Subaru Impreza	
BASE PRICE	$19,215-$26,235
VEHICLE LAYOUT	Front-engine, AWD, 5-pass, 4-door sedan or hatchback
ENGINE	2.0L/152-hp/145-lb-ft DOHC 16-valve flat-4
TRANSMISSIONS	5-speed manual, cont variable auto
CURB WEIGHT	3,050-3,200 lb (mfr)
WHEELBASE	105.1 in
L X W X H	175.6-182.1 x 70.0 x 57.3 in
0-60 MPH	9.1-9.4 sec (*MT* est)
EPA CITY/HWY/COMB FUEL ECON	24-28/31-38/27-32 mpg (est)
ENERGY CONSUMPTION, CITY/HWY	120-140/89-109 kW-hrs/100 miles (est)
CO2 EMISSIONS, COMB	0.61-0.73 lb/mile (est)
ON SALE IN U.S.	Currently

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SUPERCAR BOOTY

Every car in this magazine has a story to tell. It's why they are here. However, a few of them hide a more interesting background than others. The cars you see here belong in that category. They are currently being stored in a secret location while the US courts unravel the details of how this extraordinary collection of supercars was assembled – and who is really their legal owner.

Even though details are still relatively light, public records show that the collection was created by Chinese businessman Eric Shen, who was working at that time for Chinese building materials magnate Zhao Hua Chen. The lawsuit, which is still being heard, alleges that Shen embezzled the money to purchase the dream collection – plus other super-luxury goods including private planes, real estate and a cache of red diamonds.

But the cars are the really interesting part of the story. Remember the white and red McLaren MP4 12C Project 8 from 2012? An early product of the McLaren Special Operations division, it was one of his prized purchases. And also one half of a pair of cars, the other being a substantially revised and identically painted McLaren F1, chassis number 072.

You might also recall that F1 from an incident caught in a YouTube video. It attracted the world's attention when it crashed down a hill into a field in 2014, the car ending up on its roof, while on an Italian road rally. The clip is still online if you want to see the footage.

What was still secret – and this legal case has now revealed – is that these two McLarens are nothing but the start of a huge collection of supercars stashed in undisclosed garages. The defendant had apparently amassed a large number of cars, with all but one – a lightly driven Enzo – painted in his trademark white with red livery and mostly with near-zero mileages.

And these aren't just any cars. They are super rare and valuable supercars. Everything from three identical Lexus LFAs to a Ferrari GTO to Ducati race bikes. They are all here. We don't know what's going to happen to the cars when the case is over, but you might soon be offered one of these supercars in any color you want – as long as it's white.

Taller AND STRONGER

THE SECOND-GENERATION CROSSOVER FEATURES A NEW POWERTRAIN AND MORE TECH

Words Erick Ayapana

Audi is unleashing a barrage of new products this year, but the Q5 crossover is the most important. The midsize luxury crossover segment has grown significantly since the original Q5's 2009 launch, so Ingolstadt's best-selling model has its work cut out. But based on our initial impressions of this new Audi, it has a good chance of coming out on top.

The 2018 Q5 isn't due in showrooms until spring, but we've had plenty of seat time in the redesigned second-gen model. In October, we sampled European-market Q5 prototypes in Cabo San Lucas, Mexico. A few weeks later, we tried the U.S.-spec version on the same route, right down to the rural dirt roads dotted with local bovines occasionally blocking our path.

Overcoming our déjà vu, we found enough differences between the two versions to keep our pen busy.

A few items might have us envying our friends across the pond. For starters, European versions get gas and diesel engine choices, including a strong 3.0-liter TDI turbodiesel that churns out 282 hp and a whopping 457 lb-ft of torque. We should be a tad jealous about that one. Audi is still hopeful it can overcome its diesel scandal and bring that new TDI here, but it's unclear if it's destined for both the Q5 and Q7 or just the latter. For now, the Q5 we get will offer one engine, a 2.0-liter turbocharged I-4 good for 252 hp and 273 lb-ft of torque. That's a bump of 32 horses and 15 lb-ft from a comparable first-gen Q5. A new seven-speed dual-clutch automatic replaces the previous eight-speed auto, and Audi's new Quattro Ultra all-wheel-drive system is standard. Audi claims the new Q5 will run to 60 mph in just 5.9 seconds—about 1.1 seconds quicker than its predecessor.

TURBO-FOUR AND NO MORE The sole engine choice for the Audi Q5 is a 2.0-liter turbocharged I-4, which is more than adequate.

TECHNOLOGICAL STRENGTH The new Q5 demonstrates Audi's knack for well-crafted interiors and innovative tech.

With the turbo-four making more power, Audi saw no reason to carry over the 3.0-liter supercharged V-6 from the outgoing Q5. That engine was rated at 272 hp and 295 lb-ft, and it propelled the Q5 from 0 to 60 mph in 5.5 seconds during our testing. Indeed the new Q5 launches strongly off the line with little turbo lag. It continues to pull strongly through the powerband even with a packed cabin of four adults and their gear.

As we've previously reported, the 2018 Q5 rides on Audi's relatively new MLB 2 platform. It's lighter and features a revised suspension setup for improved handling. That brings us to another key difference between U.S. and Euro models—the optional air suspension we don't get. It's similar to the one found in the three-row Q7 and is adjusted via Audi Drive Select, which also tweaks engine, transmission, steering, and damper settings. In a nutshell, the most notable advantages of the air suspension are its adjustable ride height, ability to counteract body lean, and auto ride leveling (to prevent rear-end droop while towing, for example). In Lift/Off-Road mode, the system provides an impressive 9.0 inches of ground clearance. It can drop as low as 6.5 inches in sporty Dynamic mode.

Meanwhile, the Q5 for the U.S. is fitted with standard steel springs that have a ride height set at 8.2 inches. That's 1.0 inch higher than the air suspension's default (auto) mode and 0.3 inch higher than the previous-generation Q5. After driving both setups back to back, we found the standard suspension to be legit. In some cases, it performed better than the air suspension—and without

The 2018 Audi Q5 should continue to stand out in this über-popular segment.

SHEETMETAL BASICS Looking for wild curves or angles? You won't find any here. Like most Audis, the 2018 Q5's styling is fairly simple, but the deep and sharp character line is eye-catching.

the price premium. Although we would prefer a slightly lower ride height, many Americans will appreciate sitting higher. Electronically adjustable dampers are available as an option, but they weren't equipped on any of the test vehicles on the drive. Based on our experience with other Audis with active dampers, this would be money well spent, especially if you enjoy the occasional canyon jaunt.

Still, Audi has managed to hit a sweet spot with the standard suspension. Bumps and road imperfections were never jarring even with our tester's 20-inch wheels (18-inch wheels are standard). The body leans a tad through fast corners, but the chassis remained planted and never seemed to understeer. Steering is what we'd expect from a high-riding crossover. There's little feedback, but on-center feel is good, and the chassis responds well to steering inputs. If steering feel in Auto mode is too light for your taste, then Dynamic mode offers more resistance. The brake-based torque-vectoring system helps in the handling department, as does Quattro Ultra, which ensures the rear wheels are always engaged during spirited driving.

Quattro Ultra differs from Audi's standard Quattro full-time all-wheel drive in that it can decouple both the driveshaft and rear differential. That essentially makes the Q5 a front-drive vehicle, all in the name of fuel economy. EPA numbers are still forthcoming, but Audi says to expect ratings to improve from the first-gen Q5 2.0T's 20/27 mpg city/highway.

The Q5's sleeker body also contributes to better fuel economy. Audi says the crossover's drag coefficient has dropped from 0.33 to 0.30 Cd. As with most Audis, the Q5's new sheetmetal is relatively conservative. A number of sharp creases are better appreciated in person. Up

2017 Audi S3 Pint-size punch

Not all vehicle refreshes are created equal. Audi has made mostly aesthetic changes to the S3, restyling the front and rear and updating the interior to match the A4 more closely. Oh, and there are some pretty major updates to the Quattro system.

Similar to the rest of the refreshed Audi A3 family, the S3 has grown out of its baby face. It now adopts the same "undercut" headlights, hexagonal grille, and squared-off front corners as the A4. Standard LED headlights and LED taillights with dynamic turn signals complete the look. Inside the cabin, the minimalist S3 benefits from a newly available Audi virtual cockpit. An updated infotainment system, smartphone integration with Apple CarPlay and Android Auto, and—finally—USB connectivity are also added to the list of goodies. S sport seats with strong bolsters and diamond stitching, available in a $1,450 package, are sumptuous and supportive without being stiff.

Under the sheetmetal, the Audi S3 has undergone a few changes. The 2.0-liter turbo I-4 and silky smooth six-speed dual-clutch transmission carry over. Audi estimates the 0–60 time will remain at 4.7 seconds. On pavement as well as on paper, this unit proves plenty powerful, almost too powerful for what this sedan needs. But you won't complain when you hit the gas pedal and receive a guttural growl as your reward. The gritty engine sound becomes sweeter the more you accelerate. This is not the car for subtlety.

The big change involves the updated Quattro system, which takes a cue from the TT and TTS. *Der Neue* Quattro allows for increased rearward torque bias and won't reduce power in an oversteer situation, making the S3 much more driftable than before. You'll see the update's effect in Dynamic mode. Driving in Comfort mode is a much tamer experience.

But in one way, the S3 reminds us of its less expensive sibling. Just like previous A3s, the S3 lacks confidence when faced with road imperfections, no matter the drive mode. Even the simplest potholes and patchy surfaces can be a chore, an indication that the S3 doesn't provide the cruising luxury you'd expect from other models in the Audi stable.

Steering feels a tad unsatisfying, as well. The S3 is reasonably good at keeping wind noise at bay, but it's not nearly as silent as the A4 Allroad.

The 2017 Audi S3 starts at $43,850, but it can reach $56,000 when loaded up. Although the price might seem high due to the car's lack of refinement in some respects, the car keeps its promise for cornering, power, and overall performance. For those who need even more performance from a pint-size package, a 400-hp RS 3 model is on the way. **Kelly Pleskot**

SPECS **Base Price** $43,850 **Vehicle Layout** Front-engine, AWD, 5-pass, 4-door sedan **Engine** 2.0L/292-hp/280-lb-ft turbocharged DOHC 16-valve I-4 **Transmission** 6-speed twin-clutch auto **Curb Weight** 3,450 lb (mfr) **Wheelbase** 103.8 in **L x W x H** 175.8 x 70.7 x 54.8 in **0-60 MPH** 4.7 sec (mfr est) **EPA City/Hwy/Comb Fuel Econ** 21/28/24 mpg **Energy Consumption, City/Hwy** 160/120 kW-hrs/100 miles **CO2 Emissions, Comb** 0.82 lb/mile **On Sale In U.S.** Currently

front, the grille sports a more angular design and more shiny bits, and the LED daytime running lamps are more eye-catching than before.

The new Q5 isn't much larger than the original. Its overall length of 183.6 inches is an inch more than before, and the wheelbase has been stretched 0.5 inch to 111.0. That means interior dimensions are largely unchanged—rear legroom gets a 0.4-inch bump to 37.8 inches, and cargo capacity is up 2.8 cubic feet to 60.1 with the second row down. There's 28.7 cubic feet of cargo capacity with the rear seats up—0.4 cubic foot less than before.

On the plus side, the Q5's interior is a significant improvement over the predecessor's. It has better materials, improved ergonomics, and the latest technology. Audi's digital virtual cockpit is available, and the updated MMI infotainment system is simply better to use and features more functionality thanks to the optional touchpad. Big updates in advanced safety and driver assistance tech further solidify Audi's semi-autonomous driving efforts. The available adaptive cruise control with traffic-jam assist, for example, takes control of braking, acceleration, and some steering duty at paces up to 40 mph.

Taller, stronger, and packed with fancy tech, the 2018 Audi Q5 should continue to stand out in this über-popular segment. Better yet, Audi says we won't have to wait long for the quick and fun SQ5. The automaker says the high-performance variant should launch shortly after the Q5, and it's expected to get the same 3.0-liter turbocharged V-6 going in the S4 and S5, where it's tuned to make around 350 hp.

If all goes to plan, the Q5 and SQ5 should launch in the second quarter of this year and will be ready to take on the Mercedes GLC, our newly crowned SUV of the Year. We're eager to find out if the Benz is ready for the Audi blitz. ■

2018 Audi Q5

BASE PRICE	$42,000 (est)
VEHICLE LAYOUT	Front-engine, AWD, 5-pass, 4-door SUV
ENGINE	2.0L/252-hp/273-lb-ft turbo DOHC 16-valve I-4
TRANSMISSION	7-speed dual-clutch automatic
CURB WEIGHT (F/R DIST)	4,050 lb (mfr)
WHEELBASE	111.0 in
L X W X H	183.6 x 74.5 x 65.3 in
0-60 MPH	5.9 sec (mfr est)
EPA CITY/HWY/COMB FUEL ECON	23/30/25 mpg (est)
ENERGY CONS, CITY/HWY	147/112 kW-hrs/100 miles (est)
CO2 EMISSIONS, COMB	0.75 lb/mile (est)

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- Weighs 528 lbs.
- 4602 lb. capacity

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PITTSBURGH

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~~$37.99~~ ~~$12.99~~

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ITEM 61607
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- Each pad measures 25" x 25"

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- Lift range: 7" - 30"

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GARAGE

Words *Motor Trend Editors*

ARRIVAL 2016 Nissan Titan XD Pro-4X Diesel Scott Evans

"Important qualification for chaperoning the Titan: having a driveway big enough to park it in (rare in LA)." @MT_Evans

EPA CITY/HWY/COMB FUEL ECON NOT RATED **BASE PRICE** $52,165
PRICE AS TESTED $59,060

Landing an all-new truck is a rare occurrence. Landing one from an overseas-branded automaker is even more so. With Nissan roaring in a rethought Titan, we had to find out if it's anything for the market leaders to sweat about. So we got our hands on a 2016 Nissan Titan XD Pro-4X off-road model with four-wheel drive and the new Cummins 5.0-liter turbodiesel V-8. Yeah, we grew some chest hair just writing that last sentence.

The XD essentially stands for "extra duty" (Nissan doesn't officially define a meaning), but it occupies a space between a light-duty and heavy-duty full-size pickup. You could call it a tweener, but to hear Nissan tell it, the Titan XD represents the capability of a heavy-duty pickup from 10 years ago. Those trucks were just fine for folks back then, and today's heavy-duty, commercial-grade capabilities are a bit over the top for the real world. After all, when was the last time you towed 15 tons of anything? The propitiously named Titan XD is an attempt to show less can be more.

Upfitting from a standard Titan to an XD runs about $1,500 and puts your starting price at about $37,500. Speccing out the diesel with its 555 lb-ft of torque adds another five grand to the bill, and four-wheel drive will cost you $3,000 on top of that. As a result, our midgrade Pro-4X model with the diesel and four-wheel drive is $52,165 before other options. Nissan shows its appreciation to someone buying that powertrain combo by including Bilstein shocks, skidplates, special wheels and all-terrain tires, and a locking rear differential. It also has niceties such as keyless entry, blind-spot warning, automatic headlights, a trailer brake controller, a backup camera, a spray-in bed liner, a navigation system, and an integrated gooseneck trailer hitch.

To that kitchen-sink list, we added a few other options. The $1,100 Pro-4X Utility and Audio package got us front and rear parking sensors, a 12-speaker Rockford Fosgate stereo system, a power-sliding rear window, LED bed lighting, an adjustable bed tie-down system, and a 110-volt outlet in the bed. The $1,510 Pro-4X Luxury

Much of the 2016 Titan XD's interior will look familiar to anyone acquainted with modern Nissan vehicles, but the Cummins-sourced turbodiesel V-8, which makes 310 horsepower and 555 lb-ft of torque, is completely unique.

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SPECS 2016 Nissan Titan XD Pro-4X 4WD

PAUL LAQUETTE

CO2 emissions **Not rated**		MT figure eight 29.8 sec @ 0.55 g (avg)
9.2 0-60 mph	17.0 sec @ 81.2 mph Quarter mile	135 ft Braking distance, 60-0 mph

Vehicle Layout Front-engine, 4WD, 5-pass, 4-door truck
Engine 5.0L/310-hp/555-lb-ft turbodiesel DOHC 32-valve V-8
Transmission 6-speed automatic
Lateral Acceleration 0.70 g (avg)
Curb Weight (F/R Dist) 7,340 lb (59/41%)
Energy Cons, City/Hwy Not rated

package added the Around View 360-degree camera system, cooled front seats, and Titan Boxes, which fit over and around the wheelwells in the bed. We also got the $3,310 Pro-4X Convenience package, which adds a remote starter, heated leather seats in the front and rear, an auto-dimming driver-side mirror, and a heated, power-tilting and telescoping steering wheel. À la carte, we opted for mud flaps, an electronically locking tailgate, and never-lose-it-in-a-parking-lot Solar Flare yellow paint. All told, our truck rolls heavy at $59,060.

I do mean heavy, too. It's as heavy as a typical heavy-duty truck. Unfortunately, it's also slower than a typical HD truck; good thing trucks aren't just about speed. Will that put us off the Titan XD after a year? Or will its other capabilities save the day? We'll have to see.

2017 Mini Cooper S Clubman All4 Alex Nishimoto

"Just as Mini offers customers many ways to personalize their cars, the Clubman's driving experience can be tailored via a number of modes."
@MT_NishiMOTOR

Service life / 2 mo/2,932 mi
Avg CO2 / 0.86 lb/mi
Energy cons / 149 kW-hrs/100 mi
Unresolved problems / None
Maintenance cost / $0
Normal-wear cost / $0
Base price / $30,300
As tested / $38,750

AVG MPG FUEL ECON
22.6 MPG comb.

My last two long-term vehicles (a 2015 Nissan Versa Note and 2016 Mitsubishi Outlander) weren't terribly exciting, so driving the Mini Clubman Cooper S every day has been a nice change of pace. I appreciate its peppy engine even if it has room for improvement.

The 2.0-liter turbo engine makes 189 hp and 207 lb-ft of torque, and when on boost, it feels like it has plenty of power. That said, the turbo-four really doesn't wake up until about 2,000 rpm. "The turbo lag off the line is frustrating," associate editor Scott Evans said. "I like the power when it's on the boil, but every stoplight is a minor annoyance."

A launch control feature helps remedy this. It makes the most of the car's all-wheel-drive grip by letting you take off with the turbo already spooled up. It's not a push-you-back-in-your-seat launch, but it's better than waiting for boost to kick in. One drawback is you have to let the transmission cool for at least five minutes before you can do it again. And you'd probably look childish revving your engine to the moon at every stoplight. Still, I like having the option.

It has a number of settings to choose from. The Driving Dynamics Control system lets you select one of three modes using a large rotating ring at the base of the shifter. Green mode dulls throttle response and gets you to top gear as quickly as possible. Sport mode enhances throttle response and widens the shift points, and you can really feel the difference. Another sporty setting is linked to the eight-speed automatic, activated by clicking the shifter to the left from drive. This widens shift points even farther when left alone and allows for manual control if you move the shifter up or down or use the steering wheel paddle shifters. Shifts in manual mode are fast and precise, and I find myself using the paddles more frequently than I have in other cars equipped with them.

I like all of the customization the Clubman offers, but I wish I could set Sport as my default mode. The car always starts in Mid mode, which isn't bad, but it doesn't offer the level of sportiness I expect from a Mini. Having to click over to Sport mode every time I get in is a minor inconvenience, but the more engaging drive is definitely worth the extra effort.

I love how the infotainment screen tells you to "Motor Hard!" when you select Sport mode. It's little things like this that people love about Mini.

The rear bench seat popped out of its clips. This might have been human-induced—still investigating—but regardless it was slightly difficult to get them snapped back in.

Purged a bunch of unnecessary junk from my house and loaded it into the cargo area for a trip to my local Goodwill.

2016 Volkswagen Golf SportWagen TSI (S) Brian Vance

"Up the passenger load to four adults, and the stick shift and low-end torque might make you feel like a teen learning to drive—lots of stalls." @BrianNVance

Service life / 7 mo/12,492 mi
Avg CO2 / 0.64 lb/mi
Energy cons / 112 kW-hrs/100 mi
Unresolved problems / None
Maintenance cost / $154.32 (oil change, inspection, tire rotation)
Normal-wear cost / $0
Base price / $22,445 **As tested** / $22,715

REAL MPG FUEL ECON 30.2 MPG comb.

The engine rattled, thunked, went putter … putter, and then stopped. I glanced with a look of embarrassment in the rearview mirror toward my back-seat passengers as my friend in the front seat snickered out loud. I stalled it—and this wasn't the first time, won't likely be the last. Here's the thing: Although I've been driving this SportWagen for many months, I'm still struggling to master the clutch/throttle matching, and as a result, I sometimes stall the engine because of sloppy/tricky clutch work.

Some days I'm as smooth as butter, executing shift after shift without even the slightest hint of driveline shudder. But other days, I'll stall it at a busy intersection and wonder where I went wrong. While tour-guiding with out-of-town visitors, I realized that most if not all of these stalls are happening when I have a car full of passengers. When curb weight jumps up by 500 pounds or so, the wagon drives a lot differently than when I am zipping around by myself. My fix? Recalibrate my pedal work and rev the engine higher when my curb weight goes up.

Rewind to a few weeks ago when I was late meeting Ed Loh for a carpool to a meeting in Orange County. Traffic in west L.A. was crowded, as usual, so I pushed the SportWagen harder than I had ever driven it. This included aggressively fast shifts, quick lane changes, and lots of high revs. Keeping the engine revving above 3,200 rpm, I allowed it to hover in its powerband. The car responded positively, allowing me to dart in and out of ever-evolving traffic on the large, wide boulevards of Baldwin Hills and Inglewood.

All the spirited driving got me there on time, and when I pulled into the parking garage to meet Mr. Loh, I felt bad for pushing the drivetrain so hard, as that 20 minutes was the hardest it had ever been driven. The wagon didn't seem to mind, and it's then that I realized this car isn't all that far removed from a GTI. Aggressive driving is in its bloodline.

Ample cargo space is appreciated in our three-row Volvo XC90, and when that wasn't enough, we hooked up a trailer.

2016 Volvo XC90 T6 Inscription Alisa Priddle

"The 2.0-liter super/turbo had its work cut out for it pulling a fully loaded TEN trailer." @alisapriddle

Service life / 6 mo/15,031 mi
Avg CO2 / 0.90 lb/mi
Energy cons / 157 kW-hrs/100 mi
Unresolved problems / None
Maintenance cost / $0 (oil change, inspection)
Normal-wear cost / $0
Base price / $56,395 **As tested** / $69,625

AVG MPG FUEL ECON 21.5 MPG comb.

One of the reasons we insisted our XC90 have a trailer hitch (to the point of retrofitting) was to be able to tow the TEN tailgate party trailer, which weighs 3,400 pounds. That's comfortably under the XC90's 5,000-pound tow rating, so our tech guru and cabin renovator Frank Markus chose a tailgating-free weekend to fill the trailer with eight new vinyl windows purchased at Home Depot for installation at his Ghibli Shores retreat north of Detroit. His engineering brain calculated the added mass brought the load to about the 5,000 mark.

The 2.0-liter turbo had its work cut out for it pulling a full load. Acceleration response was severely reduced, but the engine never felt overburdened and always accelerated to highway speeds in a safe time and distance.

We do appreciate that the XC90 trailer hitch package includes both seven- and four-pin wiring sockets to accommodate both new trailers and old-timers like the boat trailer we used to take the fishing boat out of the water at the end of the season. The ability to drop the rear suspension greatly eases trailer unhitching, and the camera gives a nice high-def view of the hitch to position the ball perfectly in one try. Markus said the only trick he missed: the new trailer-reversing aids that have started to appear on vehicles such as the Ford F-150 and European-market Audi Q7, which would have eased the task of reversing a quarter mile up his cabin's driveway.

Since we last checked in, we also had another trip to the dealership after the check-engine light came on. The culprit: cracked ceramic on a spark plug in one of the cylinders. It was an unusual problem, and the service department had no idea what caused it to crack and misfire. We also got a software update, which should prevent a repeat of an earlier incident where our gauges went crazy after running out of gas. After the fixes and a bath, we were back on the road. Once again, no cost.

2016 Mazda MX-5 Miata (Club) Erick Ayapana

"A road trip to visit our friendly neighbors up north was lots of fun and very, very hot." @erkayapana

Service life / 11 mo/26,567 mi
Avg CO2 / 0.64 lb/mi
Energy cons / 112 kW-hrs/100 mi
Unresolved problems / None
Maintenance cost / $336.12 (3-oil change, inspection, tire rotation)
Normal-wear cost / $0
Base price / $29,420
As tested / $32,820

REAL MPG FUEL ECON 30.1 MPG comb.

The long-term Miata is sitting in the #MTGarage with a new top and an air conditioner that works again. I mentioned the soft-top issue in a previous update, but AC troubles surfaced during a road trip from Los Angeles to Canada and back down the beautiful Oregon coast. The 2,800-mile trip was close to perfect until the AC stopped blowing cold air when I needed it the most—during a six-hour leg through Central California in triple-digit heat.

A trip to the dealership revealed a busted weld connecting a pipe to the compressor. The service techs couldn't determine what caused the failure, but our ever-mindful associate road test editor, Benson Kong, speculates it could be collateral damage from a recent fender bender. Whatever the cause, Mazda completed the repair under warranty, and the AC is once again blowing cold air.

This visit also addressed the issue with the soft top, which was showing premature wear and fraying in multiple spots due to the fabric rubbing against the frame when the top is down. The fix required a replacement fabric soft top and a completely new frame that's been redesigned to prevent the rubbing. There's no noticeable difference between the old and new top, although the new one does appear to sit a tad higher in the down position. On the upside, the new top pops up higher when unlatched from the down position, which makes it easier to reach from the driver's seat. Hopefully this resolves the issue, because the repair wasn't cheap—the invoice noted that the new soft top (fabric, glass, and frame) totaled $6,396, thankfully covered under warranty.

My service adviser said Mazda hasn't issued a service bulletin for this issue. Other owners are experiencing it, though; it's a popular topic on Miata forums. Some owners have reported fraying caused by the top rubbing against the roll hoops, and others have reported failing support straps, but it appears Mazda has solved both problems.

A dreary and foggy day on the Oregon coast is not an excuse to leave the Miata's top up.

2016 Land Rover Range Rover Sport HSE Td6 William Walker

"Uh, what is leaking from the underside of the Rover? Back to the dealer it goes!" @mt_dubdub

Service life / 8 mo/17,149 mi **Avg CO2** / 0.83 lb/mi
Energy cons / 140 kW-hrs/100 mi
Unresolved problems / None
Maintenance cost / $876.65 (2-DEF refill; 1-oil change, inspection, tire rotation, cabin air filter, fuel filter)
Normal-wear cost / $0 **Base price** / $72,445
As tested / $83,510

REAL MPG FUEL ECON 26.9 MPG comb.

A few days after getting the Range Rover returned from its 16,000-mile service, I walked out to find my parking spot covered with fuel. A look under the car discovered a small but steady drip of diesel. It had soaked the ground and saturated the inner fender-well material. Thinking I could discover the source of the leak, I opened the hood to find a couple of oil-soaked rags that had been left in the engine bay from the previous week's service.

Unsure of the issue, my local Land Rover dealer decided the safest bet was to have the Range Rover towed in for service. Excellent. I wasn't pressed for time, and this would give me a chance to experience Land Rover's complimentary roadside assistance, which covers all vehicles under warranty. A quick call to the hotline and a tow truck was on its way. Arrival time? Ninety minutes? I realize free is a really good deal, but an hour and a half is a long time to wait. Luckily, I was home, so waiting 90 minutes wasn't going to be an issue, but if I was on the side of the road, I probably would be upset. Ninety minutes came and went and still no tow truck. Another call to the hotline informed me that it would be another 45 minutes, so I gave the key to my wife and took an Uber to the dealer to pick up a loaner to head into the office. Hours passed, the sun set, and finally, six and a half hours after first calling roadside assistance, the tow truck arrived to bring the car to the dealer.

So what was the source of the fuel leak? Part of the 16,000-mile service involves replacing the fuel filter, which caused a failure in the fuel-filter seal, allowing fuel to seep out. What caused the oil-soaked rags to be left in the engine bay? That was just laughed off by the service representative.

Since that fuel-leak issue , the Rover has been flawless. A co-worker did have a run-in with a pole, but the damage was minor. I continue to enjoy every day I spend behind the wheel.

I am pretty sure the speed limit in the LAX arrival area (middle) is not 80 mph despite what the screen says. Later, an encounter with a parking pole left a mark (right). Most of it buffed out.

"The Outlander was reliable and cheap to maintain."

The exterior update gives back some of the character the Outlander lost when the current generation arrived in 2014.

2016 Mitsubishi Outlander Alex Nishimoto

"The Outlander has improved with this refresh, but it still has a long way to go to catch up to the competition."
@MT_NishiMOTOR

Mitsubishi has been facing tribulations in the U.S. market for nearly two decades. It was unable to gather any momentum at the turn of the century and hasn't really participated in the post-recession recovery. What's more, the brand is facing a turbulent ride ahead with the recent fuel economy reporting scandal in its home market of Japan.

When the current Outlander made its debut for the 2014 model year, I thought the crossover might be a savior for the three-diamond brand with its more mature styling and long list of available features. After driving the refreshed 2016 model for a year, I'm less convinced that's the case, but the Outlander should at least be good enough to keep the automaker in the game until the next one arrives. Through October 2016, the Outlander is Mitsubishi's second-best-selling model, right behind the smaller Outlander Sport crossover.

The newest Outlander proved to be relatively trouble-free during its 13-month stay with us. Three dealer trips for routine maintenance were all it needed after 26,871 miles. Those services included tire rotations, inspections, three oil changes, and a new cabin air filter. The total maintenance cost was $341.96. That is just a bit less than the $349.50 we spent on our old long-term 2015 Honda CR-V Touring AWD, which covered less distance. It's also a good deal cheaper than the $648.61 we spent on our long-term 2014 Nissan Rogue over its 12 months and 21,550 miles in our care.

The Outlander was reliable and cheap to maintain. But with so many crossovers on the market, I could only recommend it to someone who prioritizes frugality above all else. As a no-frills three-row crossover, it's a good option. The value proposition is strong for base models, but that gets less enticing as you pile on options and packages.

Service life / 13 mo/26,871 mi
Base price / $27,845 **Options /** SEL Touring package ($5,250: navigation, forward collision and lane departure warnings, adaptive cruise, sunroof, power liftgate, premium audio)
Price as tested / $33,095
Avg fuel econ/CO2 / 25.2 mpg/0.77 lb/mi
Problem areas / None
Maintenance cost / $341.96 (3-oil change, tire rotation, inspection; 1-cabin air filter)
Normal-wear cost/ $0
3-year residual value*/ $15,650/$17,900
Recalls / None

REAL MPG CITY/HWY/COMB FUEL ECON
23.2/26.9/24.7 MPG

*IntelliChoice trade-in/retail (at 42,000 miles)

The Outlander's cabin design is straightforward and simple, and although it looks slightly dated, it should offend no one.

Being a tweener helps the Outlander stand out in a crowded segment. The model is slightly larger than other compact crossovers and offers a standard third row.

The crossover's 166-hp 2.4-liter I-4 didn't present any mechanical issues, but it did leave us yearning for more power. The engine is fine with just two people in the car, but as soon as more passengers or cargo are added, it struggles to get up to speed. Mashing the pedal can flog the Outlander to its desired result, but you and your passengers will be subjected to the endless engine whine that's characteristic of older CVTs at wide-open throttle.

And although Mitsubishi offers many of the same tech features as other automakers, know that not all lane departure warning and adaptive cruise control systems are created equal. We found the advanced safety features in the $5,250 SEL Touring package to be effective but many steps behind the competition. The lane departure warning is far too sensitive; it beeps at you insistently when your tires even come close to the lane lines. The adaptive cruise control system maintains a larger than usual gap between you and the car in front of you even when set at the closest following distance and then brakes abruptly when a car merges into that enticingly open space. That sounds like a helpful driver aid, but it ends up feeling like a gross overreaction when there are multiple car lengths between us. Adaptive cruise is normally one of my favorite features, but I seldom used it in the Outlander because it was so jerky. The forward collision mitigation system does work well, however, and was good enough to earn the 2016 Mitsubishi Outlander a Top Safety Pick+ rating from IIHS.

The Outlander's interior is conservatively styled and would be considered boring if not for the dark accents on the door panels and dash. The 6.1-inch infotainment display is dated but functional with easy-to-navigate menus and a responsive touchscreen. The leather interior showed normal wear. The front seats were comfortable the entire time. The second row wasn't bad, but passengers reported being uncomfortable on long trips.

I always volunteered the Outlander's seven-passenger capacity when the need arose, but my adult friends and family rarely wanted to squeeze into the cramped back row. Needless to say, the third-row bench didn't get much use. But I could see how the feature, which comes standard, would make the Outlander attractive to families with young children.

Whenever I had cargo to haul, I was glad to have the Outlander's 34.2 cubic feet of space behind the second row of seats. That expands to 63.3 cubic feet with the second row folded down, which was good enough for a small ladder, oblong moving boxes, and numerous other bulky items. Although the Outlander's cargo area was very useful, waiting on the power liftgate to sluggishly open and close tested my patience.

Being the four-cylinder model, the Outlander was fairly good on gas. Our average fuel economy was 25.2 mpg, identical to our 2015 CR-V long-termer and better than the 23.3-mpg average of our 2014 Rogue. The EPA rates the Outlander S-AWC at 24/29/26 mpg city/highway/combined. Our Real MPG test results of 23.2/26.9/24.7 mpg suggest those numbers are a bit optimistic. With that in mind, our average isn't bad. The Outlander spent much of its time commuting in heavy traffic, too.

Our Outlander had a good amount of content for its $33,095 sticker price. But again, not all of those features work as well as those offered by the competition. I think the Outlander makes a more compelling case as a stripped-down base model. A front-wheel-drive 2017 Outlander ES is a great value at its $24,390 starting price because it offers more room than a Honda CR-V and has a standard third row for less money. It's a sensible choice for new families on a budget, and it would serve them well until they're ready to trade up. If by that time Mitsubishi has improved its crossover offerings, maybe the family could return to the Mitsu lot. If not, there are many other options out there. ■

POWERTRAIN/CHASSIS	2016 Mitsubishi Outlander 2.4 SEL S-AWC
DRIVETRAIN LAYOUT	Front-engine, AWD
ENGINE TYPE	I-4, alum block/head
VALVETRAIN	SOHC, 4 valves/cyl
DISPLACEMENT	144.0 cu in/2,360cc
COMPRESSION RATIO	10.5:1
POWER (SAE NET)	166 hp @ 6,000 rpm
TORQUE (SAE NET)	162 lb-ft @ 4,200 rpm
REDLINE	6,500 rpm
WEIGHT TO POWER	22.0 lb/hp
TRANSMISSION	Cont variable auto
AXLE/FINAL-DRIVE RATIO	6.03:1/2.28:1
SUSPENSION, FRONT; REAR	Struts, coil springs, anti-roll bar; multilink, coil springs, anti-roll bar
STEERING RATIO	16.7:1
TURNS LOCK-TO-LOCK	3.3
BRAKES, F; R	11.6-in vented disc; 11.9-in disc, ABS
WHEELS	7.0 x 18-in cast aluminum
TIRES	225/55R18 97H M+S Toyo A24
DIMENSIONS	
WHEELBASE	105.1 in
TRACK, F/R	60.6/60.6 in
LENGTH X WIDTH X HEIGHT	184.8 x 71.3 x 66.1 in
GROUND CLEARANCE	8.5 in
APPRCH/DEPART ANGLE	22.0/21.0 deg
TURNING CIRCLE	34.8 ft
CURB WEIGHT	3,651 lb
WEIGHT DIST, F/R	55/45%
TOWING CAPACITY	1,500 lb
SEATING CAPACITY	7
HEADROOM, F/M/R	39.9/37.2/35.7 in
LEGROOM, F/M/R	40.9/37.3/28.2 in
SHOULDER ROOM, F/M/R	56.6/56.1/51.4 in
CARGO VOL BEH F/M/R	63.3/34.2/10.3 cu ft
TEST DATA	
ACCELERATION TO MPH	
0-30	3.3 sec
0-40	5.0
0-50	6.8
0-60	9.2
0-70	11.9
0-80	15.7
PASSING, 45-65 MPH	4.7
QUARTER MILE	17.0 sec @ 83.1 mph
BRAKING, 60-0 MPH	119 ft
LATERAL ACCELERATION	0.77 g (avg)
MT FIGURE EIGHT	28.8 sec @ 0.56 g (avg)
TOP-GEAR REVS @ 60 MPH	2,000 rpm
CONSUMER INFO	
STABILITY/TRACTION CONTROL	Yes/Yes
AIRBAGS	Dual front, front side, f/r curtain, driver knee
BASIC WARRANTY	5 yrs/60,000 miles
POWERTRAIN WARRANTY	10 yrs/100,000 miles
ROADSIDE ASSISTANCE	5 yrs/60,000 miles
FUEL CAPACITY	15.8 gal
EPA CITY/HWY/COMB ECON	24/29/26 mpg
ENERGY CONS, CITY/HWY	140/116 kW-hrs/100 miles
CO2 EMISSIONS, COMB	0.75 lb/mile
REAL MPG, CITY/HWY/COMB	23.2/26.9/24.7 mpg
RECOMMENDED FUEL	Unleaded regular

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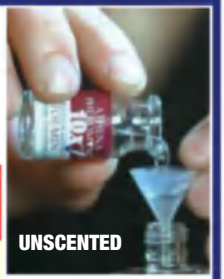

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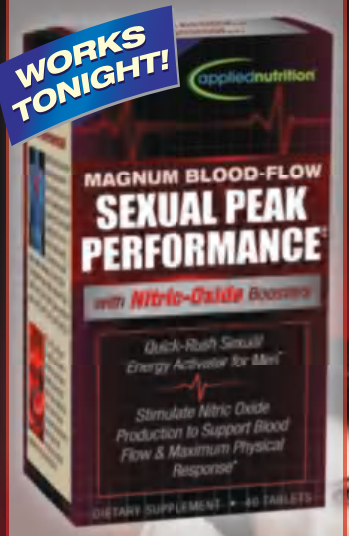
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Angus MacKenzie

The Big Picture

GAME THEORY THE AUTONOMOUS CAR FOR DRIVING ENTHUSIASTS

For automotive enthusiasts who love driving, autonomous cars are the metastasis of an insidious rot that began with GM's Hydra-Matic and shifted into overdrive with Porsche's eye-wateringly complex Doppelkupplungsgetriebe. To the true disbelievers, there is a simple truth about the modern automotive universe: The smarter the car, the dumber it is to drive.

They're right, to a point. Today's cars have taken a lot of the skill and sensitivity, the feel and finesse, out of the art of driving; they're able to figure out everything from gear change points to tire slip angles to optimal throttle inputs to maximum braking inputs. And with an autonomous car, you won't even have to point it and plant it. Just put the brain in neutral, sit back, and ride.

It doesn't matter what we enthusiasts think or how much we rage against the machine. Autonomous cars are the future because most people who buy cars aren't all that interested in driving them. For them, driving is a chore, not a pleasure, and certainly not an art. It's something they do to get to work, to get the kids to soccer practice, to get to the restaurant—to get on with the rest of their lives. They'll love a car that will enable them to do emails over a coffee as it drives the morning commute or take them safely home after a few evening cocktails.

The idea of an autonomous Chevy or Toyota or Volkswagen isn't an intellectual stretch, as they are brands that have long specialized in providing automobility for the masses. And when Daimler builds a fully self-driving vehicle, it will be the Mercedes-Benz of autonomous cars, imbued with everything the three-pointed star stands for. But for automakers like Ferrari, Porsche, McLaren, or even individual vehicle lines like Corvette, Mustang, or BMW's M family, autonomous cars present an interesting existential challenge: Why build a driver's car when the car can do all the driving?

Surprisingly, AMG boss Tobias Moers sees autonomous vehicles as an opportunity, not a threat. His wild new Mercedes-AMG E63 S, with its 603-hp 4.0-liter twin-turbo V-8, all-wheel drive, and ability to lap the hallowed Nürburgring Nordschleife in less than 7 minutes and 50 seconds, has exactly the same near-autonomous driving capability as a regular four-cylinder E300 sedan. And as Daimler further develops the technology, Moers says AMG vehicles will offer even more sophisticated self-driving experiences.

He insists there will never be an AMG car without a steering wheel. And he recognizes that AMG might have to follow the lead of cars such as the three-pedal Porsche 911 R and build something that's deliberately designed to require more driver input. But Moers is already thinking about AMG cars that will be able to completely drive themselves, and not because he wants to sell them to people who aren't that interested in driving. On the contrary, he believes a highly capable and fully autonomous AMG vehicle could provide enthusiasts a master class in the art of driving.

Tobias Moers sees autonomous vehicles as an opportunity, not a threat.

Moers points out it won't be too long before autonomous vehicle capability is such that cars will be able to lap a racetrack all by themselves as quickly as a pro race driver. So AMG owners could be autonomously driven around, say, the Nürburgring Nordschleife as if AMG brand ambassador Bernd Schneider, a former F1 driver and multiple German touring car champion, was behind the wheel. Combine that capability with augmented reality technologies that show the optimal braking and acceleration points and the right lines through turns, and suddenly self-driving vehicles become game changers in a totally unexpected way.

"Autonomous cars will democratize motor sport," Moers says. He envisions AMG owners being able to switch their cars to a semi-autonomous mode and have a digital Bernd Schneider coach them in real time as they drive, the on-board software and drive control systems progressively reducing the assistance provided by the car as their skills and experience improve. If he's right, maybe we enthusiasts can relax a little. Maybe smarter cars could actually teach us to be smarter, faster drivers. ■

Mercedes-AMG E63 S

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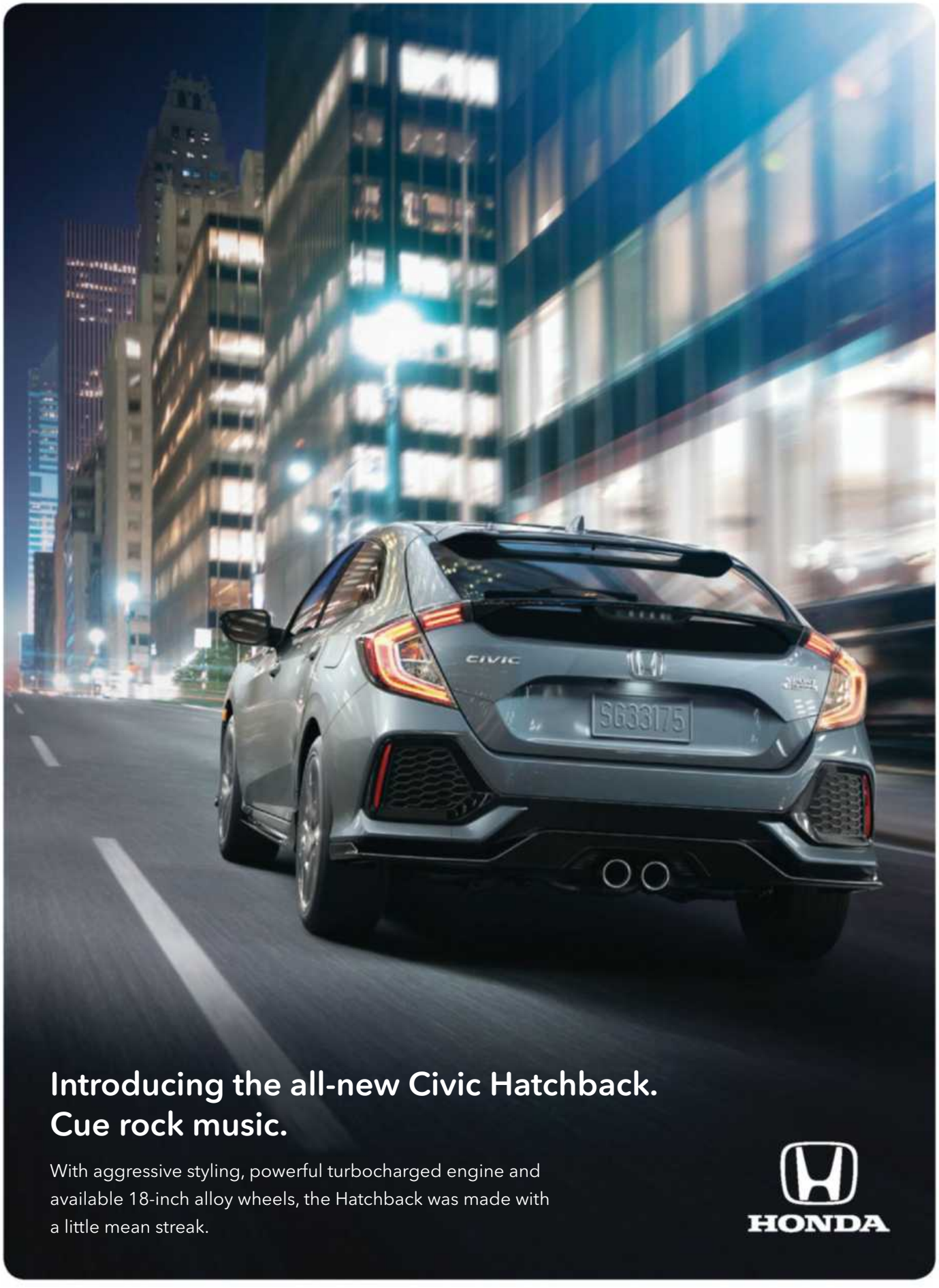

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